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JOHN S. HERRINGTON NOMINATION

HEARING

BEFORE THE

COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

NINETY-NINTH CONGRESS

FIRST SESSION

ON THE

NOMINATION OF
JOHN S. HERRINGTON TO BE SECRETARY OF ENERGY

JANUARY 31, 1985

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CONTENTS

STATEMENTS

Page
Alvarez, Robert, director, nuclear power and weapons project, Environmental Policy Institute, accompanied by Norris McDonald, director, energy conservation project 92
Evans, Hon. Daniel J., a U.S. Senator from the State of Washington 9
Hecht, Hon. Chic, a U.S. Senator from the State of Nevada 9
Herrington, Hon. John S., nominee to be Secretary of Energy 17
Johnston, Hon. J. Bennett, a U.S. Senator from the State of Louisiana 3
McClure, Hon. James A., a U.S. Senator from the State of Idaho 1
McDonald, Norris, director, energy conservation project, Environmental Policy Institute 94
Murkowski, Hon. Frank H., a U.S. Senator from the State of Alaska 10
Nickles, Hon. Don, a U.S. Senator from the State of Oklahoma 11
Warner, Hon. John W., a U.S. Senator from the State of Virginia 11
Wilson, Hon. Pete, a U.S. Senator from the State of California 15

APPENDIXES

Appendix I

Biography and informational statement of John S. Herrington 125

Appendix II

Responses of John S. Herrington to additional committee questions 163

Appendix III

Responses of the Environmental Policy Institute to an additional question of Senator Domenici 328

Appendix IV

Additional communications submitted for the record in support of John S. Herrington 331

JOHN S. HERRINGTON NOMINATION

THURSDAY, JANUARY 31, 1985

U.S. Senate,
Committee on Energy and Natural Resources,
Washington, DC.

The committee met, pursuant to notice, at 9:35 a.m., in room SD-366, Dirksen Office Building, Hon. James A. McClure, chairman, presiding.

Present: Senators McClure, Hatfield, Weicker, Domenici, Warner, Murkowski, Nickles, Hecht, Heinz, Evans, Johnston, Bumpers, Ford, Matsunaga, Melcher, and Levin.

Also present: Gary Ellsworth, chief counsel; E. David Doane, senior counsel; Richard D. Grundy, senior professional staff member; D. Michael Harvey, chief counsel for the minority; Benjamin S. Cooper, professional staff member for the minority; and Elizabeth Moler and James T. Bruce, counsels for the minority.

OPENING STATEMENT OF HON. JAMES A. McCLURE, A U.S. SENATOR FROM THE STATE OF IDAHO

The Chairman. The committee will come to order.

This is a hearing on the Presidential nomination of John S. Herrington of California to be Secretary of Energy.

Four years ago, in January 1981, this committee considered another nomination for the position of Secretary of Energy. During the hearing on that nomination, we discussed the need for action in a number of areas, such as eliminating excessive Government management of fuel and removing certain Federal regulations that were then imposed on the energy industry.

In addition, I expressed the opinion that the Department of Energy was ill-prepared to deal with any serious disruption in our energy supplies. In the area of nuclear waste policy, I observed that we needed to take action without delay to improve the procedures for the siting of nuclear waste facilities.

Now that 4 years have passed, where do those issues stand today? In some areas, substantial progress has been made. For example, all remaining price and allocation controls have been removed from crude oil and petroleum products. As of the first of this month, wellhead price controls no longer apply to over half of our natural gas production. In addition, we have initiated new Federal programs for the siting and development of permanent storage facilities for nuclear waste.

The Energy Emergency Preparedness Act of 1982 improved our ability to respond effectively to oil supply disruptions and other energy emergencies. Moreover, this country is now much less dependent on crude oil imports from the Middle East and Africa, two of the more volatile-producing areas. Last year, imports from Middle Eastern and African countries amounted to less than half of what they were in 1981.

Our vulnerability to import disruptions has also been reduced by the increasing size of the strategic petroleum reserve, which now contains about 454 million barrels of oil. The average fill rate over the past quarter has exceeded 211,000 barrels per day.

Four years ago, at the beginning of 1981, the strategic petroleum reserve contained only 110 million barrels, and today, with the reserve four times larger, we have substantially improved our national security, and I am confident that we have also added stability to the world oil market, which no longer appears to react so strongly to unexpected events.

With all of this good news, some may be tempted to ask, why do we need a Secretary of Energy? In my judgment, there are sound reasons. First, our improved energy picture has a dark side. This country continues to import large volumes of oil. Thus, we continue to be vulnerable to disruptions in the supplies of crude oil in the world markets.

During 1984, our imports of crude oil and petroleum products averaged over 5 million barrels per day. Thus volume was about 32 percent of total demand last year and it amounts to more than a 9-percent increase over 1983 import levels. Imports for 1985 are projected by the industry to increase further by 4 percent over last year's level. I might just note parenthetically, that sounds like 1973.

Reliance on the strategic petroleum reserve, large as it is, may not adequately offset this increasing dependence on imports. If a serious import disruption should occur, it is not at all clear that SPR oil would be distributed in a timely and effective manner. New distribution facilities are needed if there is to be reasonable assurance that serious fuel shortages in certain areas of the country would be avoided.

We need a Cabinet-level officer, a Secretary of Energy, with clear responsibility for assessing the circumstances of any energy emergency, serving as the Government's spokesman, monitoring events and activities within the oil industry, and making the necessary judgments regarding the availability of SPR oil.

There is an ongoing need for a separate Federal agency that can serve as a clear focal point for formulating national energy policy, effectively implementing that policy, and managing the energy-related Federal programs, such as energy research and development, Federal power marketing, uranium enrichment, and the national laboratories. Other activities include managing the strategic petroleum reserve, developing nuclear waste facilities, and planning for energy emergencies.

In addition to these civilian activities, which are funded at a level of $7 billion per year, the Department manages the atomic energy defense program, which is also funded at about $7 billion per year.

Those who advocate the merger of the Department of Energy with another department have the burden of proof in showing that greater efficiency would result. So far, that burden has not been met.

Mr. Herrington is a former practicing attorney and businessman who has served in the Reagan administration since March 1981. He served first on the White House staff, then as an Assistant Secretary of the Navy, and most recently as Assistant to the President for Presidential Personnel.

Although Mr. Herrington has not been involved in the energy policy debates of recent years, he will bring to the Department his considerable management experience as a Federal administrator. He will be in a position to apply a fresh and unbiased perspective to the decisionmaking within the Department.

I am pleased to welcome Mr. Herrington to the committee this morning.

Before turning to our colleagues for introductions, I would recognize the distinguished Senator from Louisiana, the ranking minority member of this committee.

STATEMENT OF HON. J. BENNETT JOHNSTON, A U.S. SENATOR FROM THE STATE OF LOUISIANA

Senator JOHNSTON. Thank you, Mr. Chairman. Mr. Chairman, I have a written statement I would like to put in the record at this time and just make a few comments.

First to say welcome to Mr. Herrington, and if I may break the icy suspense on what I am going to do, let me say I am going to vote for your confirmation. I am, because you have an outstanding record, because you have been a fine lawyer, because you have done a good job at personnel at the White House, and I know that that is a most difficult position and to survive with any friends after having come in off that job is really quite an accomplishment, and you have extensive numbers of friends.

John Warner of this committee speaks very highly of you and says you are sort of a protege of his. I promised John I would not hold that against you. [Laughter.]

Senator JOHNSTON. Things have changed dramatically, Mr. Herrington, as you know, in energy over the past few years. We overlearned the immediate lessons that came to us in 1973 when we had the first oil shock. We overlearned the lesson of that as a nation. We overregulated, we overprepared, we overpriced.

We did everything too much. And then as the years rolled by we compounded our mistakes, and suddenly in the 1980's things have dramatically changed and we are overlearning things in the other direction. Now, because prices are down, because there is what we call a deliverability surplus in natural gas, a temporary bubble, as they call it, in crude oil, and therefore a threatened collapse of OPEC, there are those who feel that we should abandon whatever the Government does in energy, leave it all to the market, and not only leave it to the market, but don't worry about conservation, don't worry about domestic supplies, indeed don't worry about energy; it is plentiful, it will be here forever, the market will all take care of that.

Now I happen to be a strong free market advocate. I have always been for decontrol of natural gas and for crude oil. Before Jimmy

Carter first deregulated it, before President Reagan completed the job on crude oil, Senator McClure and I have for years been for that. And I do not mean to underrate the importance of deregulation and of market forces.

But lest we overlearn this lesson of the temporary surplus, let me tell you that your position will be very important to the future of this country, because unless we continue to follow through with some modest efforts which we have, then I will confidently predict in some future years, whether it is the late 1980's or the 1990's, that we will again have a shortage, that we will again have "an energy crisis," that that shortage will indeed be unnecessary.

Now, the kinds of steps we have pursued on this committee, modest steps at this time, are the finishing of the strategic petroleum reserve at some reasonable level, certainly at least 500 million barrels. I would hope for more. I know about the budget problems. We have always got budget problems. We always will have budget problems.

But you are never going to have crude oil any cheaper than it is now. We should not abandon the program. We should not abandon the fill rate. Most of all, we should not abandon the finishing of the facilities to accommodate the strategic petroleum reserve. And both of those things seem to be in the works. At least there are those who would do that.

Second, synthetic fuels. We will not be building synthetic fuel plants for 1986, or indeed for 1987. We are building those plants to demonstrate the technology in the 1990's or for the late 1980's, when we may need them. We hope we never need synthetic fuels. We hope crude oil and natural gas will be here in plentiful quantities at cheap prices forever.

But if you believe that you do not know anything about the finite nature of fossil fuels, about the world supply of oil and gas, or about recent history, all of which would indicate that at some time we are again going to be under the gun.

I think, frankly, that OPEC is—I will not say it is going to collapse, but I do not think the OPEC group is going to be able to hold up that price of crude oil. I think it is going to go to $25 a barrel or less. I have said that for over a year and a half. And you do not have to be a great observer of the international oil scene to figure out that OPEC is really at this point nothing more than an honor system among thieves. It is just not going to work, especially when there is surplus productive capacity of over 10 million barrels of oil per day.

But sooner or later we are going to need the technology of synthetic fuels, and a very modest compromise that we put together under the leadership of Senator McClure should be continued. Now, to be sure, that program is under the Synthetic Fuels Corporation but the Secretary of Energy will have a great deal to do with that and to follow through with that, as well as with other technologies that ought to be pursued under your direct program.

Next, I think the Secretary of Energy ought to have some input on the so-called Treasury tax bill. I am for a flat tax and for a fair tax and for a simplified tax. Everybody is, and throw in the flag and apple pie, too. But I can tell you, if the Treasury tax bill passes in its present form it would be very difficult to drill any oil and gas wells in this country.

The response of Treasury to those complaints was: Well, it will be OK because you will get a lot of talent and a lot of energy from one sector and put it in another, and capital out of one sector and put it in another. Translated, that means after bankruptcy these people can be employed elsewhere and that is OK.

Well, it is not OK, not just because a lot of these people are my constituents and it is very vital for the economy of our part of the country, and it is, but because we very badly need a domestic oil and gas industry. And for good or for ill, they are dependent upon those provisions of the present tax bill that give them some incentive, and without it you are just not going to get the oil and gas drilled.

And you are going to have to be a strong voice to speak for the oil and gas industry, to analyze first what it is it takes to get those oil and gas wells drilled, and second to speak up for that as these weeks and months go by.

I thought they were really kidding about that flat tax at first, until I continued to hear Regan and then Reagan and then, more importantly, the Gallop poll which said that everybody wants it, and I began to see some momentum in that direction. And you know, if there is anything that epitomizes a loophole, it is anything that goes to rich oil and gas guys—and those who hit the oil and gas wells are rich. Those who did not hit are usually out of the business. So they are not great objects of sympathy, except they are very important for the country to keep drilling those wells.

So we have in you, I think, Mr. Herrington, a man of very keen intellect, of the most difficult kind of tempering in the political system, that of deciding who gets what and that is the most difficult of all. So I think you have the background and you ought to have the skills to do this job very well, and so I am going to welcome you to your new position and look forward to working with you.

Thank you, Mr. Chairman.

[The prepared statement of Senator Johnston follows:]

STATEMENT OF SENATOR J. BENNETT JOHNSTON

Herrington Nomination

January 31, 1985

Welcome to the Committee, Mr. Herrington.

Perhaps you have heard this in your briefings in preparation for today, but in case you have not, I would like to emphasize to you that the Members of this Committee are quite convinced of the importance of a strong and effective role for the Federal Government in energy policy. This belief is not confined to any particular political party. Very little of what is decided in this Committee is decided on a partisan basis.

You are seeking to become the person in the Executive branch who, more than anyone, is responsible for the Federal role in energy. You have a lot of very difficult and very important things to worry about.

Your background in government and in the private sector is an impressive one, although it does not include any intensive experience with energy policy. Energy policy has enormously complex economic and social effects, and these effects have both domestic and international ramifications. During the last decade, the national security and foreign policy implications of energy policy came to be appreciated much more than they ever were before. Indeed, the widespread failure to appreciate these implications in the period before the 1970's played a big role in leaving the country so poorly prepared to deal with disruptions in world oil markets when they occurred.

Perhaps you will have to learn many of the details of your job as you do it. That is not unprecedented in the Federal government in general, nor is it unprecedented in the Department of Energy in particular.

You should be wary of the oversimplification that you will hear in much of the advice you get, whether it be from industry, environmentalists, "consumer" advocates or, for that matter, Members of Congress.

There are hints of some of this oversimplification in your prepared statement. You say, for example, that President Reagan's action decontrolling crude oil, gasoline and propane prices in 1981 "resulted in increased drilling, discovery and production."

Mind you, I support decontrol; I always have. But as Secretary of Energy you ought to know that drilling, discovery and production in 1981 were on a rising trend line stimulated by the oil price increases of 1978-79 that accompanied the Iranian revolution. This trend continued upwards for about a year and then dropped sharply.

Today there are about 2,500 rotary rigs in operation; there were about 4,500 at the peak of the trend in 1982. We are going to have big problems later in the decade with domestic production of oil and gas that will result directly from this fall off in drilling. Anyone who thinks that decontrol has removed our problems needs to look again.

And, of course, enactment of the Administration's proposed "tax simplification" package will dramatically reduce the ability of the domestic oil industry that is already unable to fully supply our needs.

The point here is that many Administration policies have been helpful. They have been in the right direction - so far. But there are big problems ahead, problems that will be compounded if we are complacent today. The toughest job you will have is to establish forward-looking policies in an atmosphere of apathy. Above all, you should not contribute to that false sense of security yourself.

I wish you well and stand ready to work with you. We have a great deal to do, and you will find this Committee anxious to be constructive in dealing with these problems.

The **Chairman**. Thank you, Senator Johnston.

Senator Hecht.

STATEMENT OF HON. CHIC HECHT, A U.S. SENATOR FROM THE STATE OF NEVADA

Senator **Hecht**. Thank you, Mr. Chairman.

First I want to welcome Mr. Herrington to this committee. I have come to know John Herrington quite well since my arrival in Washington, and I can assure my colleagues that he will be anything but a caretaker Secretary when confirmed by the Senate.

He is an extremely intelligent man, a man of great personal integrity and tact, and I know that he would demonstrate strong leadership and skill in dealing with energy problems in this, the second decade of the OPEC oil price.

Everyone has his own ideas about what constitutes a balanced energy policy. For myself, I believe that DOE must continue a strong role in promoting international energy cooperation, in breaking down the barriers to efficient energy resource allocation at home, and in supporting the market's expansion and diversification of our domestic energy base. OPEC or no OPEC, these are valid Federal purposes which must be continued in the future, and I believe Mr. Herrington will support these basic goals.

Without further ado, I look forward to working with Mr. Herrington in the future and urge my colleagues' support of his nomination. Thank you, Mr. Chairman.

The **Chairman**. Thank you.

Senator Evans.

STATEMENT OF HON. DANIEL J. EVANS, A U.S. SENATOR FROM THE STATE OF WASHINGTON

Senator **Evans**. Thank you, Mr. Chairman.

I think the chairman and the ranking minority member, Senator Johnston, have set forth well the hopes of this committee and certainly this Senator. I am an optimist on energy supplies and the energy future of this country.

I think you have a splendid opportunity as the new Secretary of Energy to set forth on what I believe is not only a reachable but a very important goal for this Nation and perhaps for the world at large. That is to reach the point where the inexpensive, ample, secure sources of energy are available to this Nation and to all nations. The technology, the opportunities, the natural resources are all in place now. New technologies will just make the situation that much better if we have the will and the ability to provide the necessary leadership.

My concern is that this Department under your leadership will continue to supply the impetus for basic research in a variety of alternative energy sources and then, when the winners evolve, let the marketplace take them and bring them into full flower.

I also have a special concern, as you might guess and as we have already had a chance to talk about, and that is in the extremely delicate nature of energy in the Pacific Northwest and, as time goes on, the interrelationship between the Northwest and the Southwest, and in particular in relationship to electric energy.

I think there will be decisions which need to be made, and I will have some more specific questions on that later, that will be very important to the economies of both regions. I am particularly concerned and hope that you will be a fighter in the right vineyard against some of the unwarranted proposals by the Office of Management and Budget on electric power pricing that could have dramatic consequences on regional economies throughout this Nation.

Perhaps you will not always have the direct responsibility, but you certainly will be in a position where you can provide enormous leadership on these affairs, and I look forward to working with you.

The CHAIRMAN. Thank you.

Senator Murkowski.

STATEMENT OF HON. FRANK H. MURKOWSKI, A U.S. SENATOR FROM THE STATE OF ALASKA

Senator MURKOWSKI. Thank you, Mr. Chairman.

Mr. Herrington, I think that you come into your position as Secretary of Energy with a great opportunity to maintain a momentum that has been referred to by Senator Johnston, in the sense that there have been substantial changes made in our energy picture since the oil crisis several years ago.

It is interesting to note here some figures that were given to me that indicate that non-OPEC producers grabbed 67 percent of the market share. Another figure says OPEC is losing its market share, from a high of 60 percent down to a low of 40 percent. That is not imports into the United States, however. I believe our imports are about 30 percent.

I think we all want energy independence in this country. The question this committee has labored with at great length is the question, at what price. We have seen the discussions, Mr. Chairman, in this committee concerning offshore lease sales and the question of whether indeed our industry groups can ensure that OCS development can take place and we can still protect our ocean environment.

It is interesting to reflect that in my particular State it is estimated that 60 percent of the U.S. oil reserves unproved are in the offshore area. We have seen debates before the committee on the appropriateness of leasing off Florida, off the coast of California, and more emphasis, obviously, directed toward my particular State.

But the point is, unless we have the continuation of an aggressive policy to establish what our inventories are, only then can we relate to the realities of how and if and when we want to develop those resources. It has always been perplexing to me, Mr. Herrington, to see the great lengths that we go to to stop really exploration, as opposed to development, because more often than not you don't find the oil in commercial quantities.

My point to you is, I do hope that you will maintain an aggressive posture in the Department of Energy to ensure that the momentum that has occurred in this country for a lot of reasons, some of which have been as a consequence of energy conservation, which has been excellent, others as a consequence of what is happening in OPEC, where in reality OPEC has mortgaged its cash flow and they are caught in a dilemma that can easily happen when that set of circumstances occurs.

My point, in summary, Mr. Herrington, is that I do indeed hope that you will continue to maintain an aggressive policy to ensure that indeed, through a combination of opportunities including, as Senator Johnston referred to, an aggressive policy and posture in synthetic fuels, that we maintain the momentum that we now have underway, so indeed our Nation can achieve energy independence and never again be beholding to a situation such as occurred several years ago, when really the OPEC countries held this Nation hostage and we did not know how to get out of it.

Thank you, Mr. Chairman.

The **Chairman**. Thank you.

Senator Nickles.

STATEMENT OF HON. DON NICKLES, A U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator **Nickles**. Thank you, Mr. Chairman.

Mr. Herrington, we welcome you to this committee, and it will probably be the first of many times. We have enjoyed working with you in the past and look forward to working with you in the future. I think you can tell from some of the sentiments and statements that were expressed by committee members that there certainly are still some energy challenges ahead of us.

Some of us may have a little difference of opinion on whether or not we need a Cabinet-level Department of Energy to accomplish those challenges or objectives, and we will look forward to visiting with you about those. But there certainly are some challenges.

Senator Murkowski mentioned development of Outer Continental Shelf resources, development of domestic resources. Those are certainly very important. Continued regulation in hamperance of the marketplace in natural gas, not allowing the burning of natural gas in certain industrial facilities, which in some cases makes gas where you cannot even sell it in some of the producing areas, some of the tax policies that have been floating around could be quite damaging to the energy industry as well. Nuclear production and whether or not we will have some granting of permits and expedite, I guess, new nuclear power development in the country, there are a lot of big challenges, and certainly this committee and myself and others I am sure will look forward to working with you to hopefully make some progress on those issues.

The **Chairman**. Thank you very much.

We now turn to our colleagues who are here to introduce the nominee to this committee. We want to particularly welcome a valued and constructive member of this committee, Senator Warner from Virginia.

John, you've found out now that the privilege of introducing the witness delays your opportunity to make any kind of a statement.

STATEMENT OF HON. JOHN W. WARNER, A U.S. SENATOR FROM THE STATE OF VIRGINIA

Senator **Warner**. Mr. Chairman, my distinguished colleagues, Mr. Johnston, members of the committee, I think we should quit while we are ahead. Seldom in my brief Senate career have I heard more laudatory opening statements from both the Chair and the ranking minority member and members of the committee. I think that reflects the tribute to this fine and outstanding American who has now volunteered to step up and take on these important responsibilities.

Mr. Chairman, I certainly want to share with you and the ranking minority member my views, which are consistent with those expressed here this morning. I think they were outstanding opening statements and set the framework for a fine hearing and hopefully a productive year for this committee.

My few words would be to indicate that Mr. Herrington, while a native of Los Angeles and a graduate in economics from Stanford, has shown the good wisdom to settle in Virginia, where he has pledged to remain for the foreseeable future. [Laughter.]

He received his law degree from the University of California, Hastings College of Law, and has practiced for 16 years, both as a criminal prosecutor and as a business attorney. Throughout his career, John Herrington has been recognized as a man of impeccable integrity, a skillful businessman and attorney, a master of management, and an extraordinary individual of quick study.

In his current job, Assistant to the President for Presidential Personnel, he has gained the trust and respect of many competing interests and factions for his handling of difficult decisions. I think that point was made very succinctly by Senator Johnston.

Prior to that he served as Assistant Secretary of the Navy, a Department with which I have some familiarity. When he arrived on the job in October 1981, he read a report detailing drug use in the Armed Forces. Within 2 weeks he designed, drafted, and implemented a plan for the Department of the Navy's war on drugs, one of the greatest untold success stories of the last 4 years in the Department of Defense.

With the help of thousands of sailors and marines, drug use in the Navy and Marine Corps was cut fivefold, to the lowest in the Armed Forces. For this initiative and others, he was awarded the Department of Defense Distinguished Service Medal.

With his keen intellect, fine character, and fastidious attention to detail, I am certain he will serve with excellence as the Secretary of Energy.

[The prepared statement of Senator Warner follows:]

STATEMENT OF SENATOR JOHN W. WARNER
INTRODUCTION OF JOHN S. HERRINGTON TO BE SECRETARY OF ENERGY

SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES
JANUARY 31, 1985
9:30 A.M. - SD-366

SENATE COLLEAGUES AND DISTINGUISHED GUESTS IT GIVES ME GREAT PLEASURE TO INTRODUCE TO YOU A MAN WHOSE HONORABLE RECORD OF SERVICE TO THIS NATION HAS BROUGHT HIM BEFORE THIS COMMITTEE TODAY AS PRESIDENT REAGAN'S NOMINEE FOR SECRETARY OF ENERGY: JOHN HERRINGTON.

MR. HERRINGTON IS A NATIVE OF LOS ANGELES, AND GRADUATED IN ECONOMICS FROM STANFORD UNIVERSITY

HE RECEIVED HIS LAW DEGREE FROM THE UNIVERSITY OF CALIFORNIA, HASTINGS COLLEGE OF LAW, AND HAS PRACTICED FOR SIXTEEN YEARS BOTH AS A CRIMINAL PROSECUTER AND A BUSINESS ATTORNEY.

THROUGHOUT HIS CAREER, JOHN HERRINGTON HAS BEEN RECOGNIZED AS A MAN OF IMPECCABLE INTEGRITY, A SKILLFUL BUSINESSMAN AND ATTORNEY, A MASTER OF,MANAGEMENT, AND AN EXTRAORDINARILY QUICK STUDY.

In his current job, Assistant to the President for Presidential Personnel, he has gained the trust and respect of many competing interests and factions for his handling of difficult decisions.

Prior to that he served as Assistant Secretary of the Navy, a department I know well.

When he arrived on the job in October 1981, he read a report detailing drug use in the armed services.

Within two weeks he designed, drafted and implemented a plan for the Department of the Navy's war on drugs, one of the greatest untold success stories of the last four years.

With the help of thousands of sailors and marines, drug use in the Navy and Marine Corps was cut five-fold to the lowest in the armed forces.

John Herrington is a man of high standards, and for this initiative, and others, he was awarded the Department of Defense's Distinguished Service Medal.

With his keen intellect, fine character, and fastidious attention to detail, I am certain he will serve with excellence as Secretary of Energy.

I urge his speedy confirmation.

Senator WARNER. Mr. Chairman and members of the committee, we are also privileged to have here this morning Mrs. Herrington and his daughter. I think the Chair would like to have them stand and be recognized. Mrs. Herrington is a professional in her own right and a public servant.

The CHAIRMAN. If Lois Herrington and Victoria would stand. You are certainly very, very welcome.

Mrs. HERRINGTON. Thank you.

[Applause.]

Senator WARNER. Now, John, as an old sailor, you're on your own.

The CHAIRMAN. We will recognize our colleague from California, Senator Pete Wilson.

STATEMENT OF HON. PETE WILSON, A U.S. SENATOR FROM THE STATE OF CALIFORNIA

Senator WILSON. Thank you very much, Mr. Chairman. Mr. Chairman, Senator Johnston, other distinguished members of the committee, I take great pleasure in joining our colleague from Virginia, Senator Warner, in presenting to you the Honorable John S. Herrington, designated by President Reagan to serve as our next Secretary of Energy.

I quite agree with John Warner that the opening statements have not only set a tone, but they have indicated the degree of confidence that I think is fully warranted in the President's choice to head this very difficult Department. The fact of the matter, Mr. Chairman, is that few men in this town have displayed more energy—no play on words intended—or greater dedication to public service than John Herrington.

His range of service is extensive, as Senator Warner's even summary recitals indicate. It does include, in addition to the things that have been mentioned, a distinguished career as a prosecutor while in the Ventura County district attorney's office, this following a distinguished career in the Marine Corps, which is of some incidental importance to Mr. Warner and to me. It may indicate some bias, but I do not think so.

It is also true, as you have been told, that he has left California to perform this distinguished public service, so we are happy to claim sponsorship with Virginia of a native son. It is true that, like another for whom we have great admiration, he has served in the office of Secretary of the Navy. He was the Assistant Secretary, as Senator Warner has told you, and has then gone on to distinguished service in the very difficult role of Director of Presidential Personnel. His eye for talent has proven to be outstanding.

It is appropriate that he should now be sitting here enjoying what he has inflicted on so many others. [Laughter.]

So it seems only appropriate now that Mr. Herrington has been singled out by the President to join his official family and to guide the Nation's energy policy.

Mr. Chairman, it is clear from your very eloquent opening statement, that of Senator Johnston and the others that have followed, that no one needs to tell the members of this committee about the wide array of challenges awaiting Mr. Herrington. When confirmed by the Senate, he will first and foremost face the important need to define an appropriate public-private sector relationship, one that will promote our national objective of expanding energy production without suffocating exploration or without suffocating exploration and innovation under Government's heavy hand.

Mr. Herrington is superbly prepared to accept his responsibility. He understands what such a goal will demand: a recognition of the strength of free market mechanisms in enhancing our energy security. It will require a reflection and realistic assessment of what Federal priorities ought to be in promoting that energy security. It will call for exceptional management skills, especially the oversight of people and resources, in a fashion consistent with the President's stated objective, namely more economic growth and less bureaucratic growth.

I think that there is no one who is better qualified to pursue that than John Herrington. He will, as he once pursued criminals with great vigor as a prosecutor and as he later pursued the talent required to flesh out the executive branch of Government, now pursue those goals as Secretary of Energy.

As a fellow Californian, I may be accused of bias. But as you have seen, that bias is shared by the great State of Virginia, the Commonwealth of Virginia. The point is John Herrington shares with all of us a basic commitment to energy independence and none of us wish to replace dependence on foreign oil with dependence on a Washington bureaucracy.

He will get the job done, he will get it done in exceptional fashion. His friendships are more than friendships. They arise from the admiration and respect which so who have been privileged to know him feel for the man both as a professional and the admiration they feel for the high character he has brought to all the responsibilities that he has discharged with such great vigor.

Mr. Chairman, I trust that the nomination of Mr. Herrington will be handled as expeditiously by this committee as you deal with all other matters. So with great pleasure and with high confidence, I present him to the committee for purposes of confirmation.

The **Chairman**. Thank you very much, Senator Wilson.

Mr. Herrington, the rules of the committee which apply to all nominees who appear before this committee for confirmation require that they be sworn in connection with their testimony. Would you please rise and raise your right hand.

[Whereupon, John S. Herrington was duly sworn by the chairman.]

The **Chairman**. Please be seated.

Before you begin your statement, there are four questions addressed to witnesses before this committee who are nominated for positions in the executive branch, and I would like to ask these questions of you. Will you be available to appear before this committee and other congressional committees to represent departmental positions and respond to issues of concern to the Congress?

Mr. **Herrington**. Yes.

The **Chairman**. Your informational statement has been submitted to the committee. However, it is required that this statement be made public unless the committee decides that special circumstances justify an exception. Do you have any objection to the publication of your informational statement?

Mr. **Herrington**. No, Mr. Chairman, I do not.

The **Chairman**. Are you aware of any personal holdings, investments, or interests that could constitute a conflict of interest or create the appearance of such a conflict should you be confirmed and assume the office to which you have been nominated by the President?

Mr. **Herrington**. Mr. Chairman, I have met with the ethics lawyers and the lawyers of the Department of Energy, and I have listed all requested information. I know of no additional information to be provided.

The **Chairman**. Are you involved in or do you have any assets held in blind trusts?

Mr. **Herrington**. No, I do not.

The **Chairman**. Mr. Herrington, thank you very much for your answers to the questions. You may proceed with your statement.

STATEMENT OF HON. JOHN S. HERRINGTON, NOMINEE TO BE SECRETARY OF ENERGY

Mr. **Herrington**. Thank you, Mr. Chairman, members of the committee. I would like to read a brief statement.

I appreciate the opportunity to appear before you today as President Reagan's nominee for the position of Secretary of Energy. Let me emphasize at the outset that I recognize that, if I am confirmed as Secretary of Energy, in addition to answering to the President of the United States, I will be responsible to this committee and the Congress. I intend to carry out my duties as Secretary in a spirit of cooperation.

I also recognize the statutory mandate Congress has established for the Department of Energy in the DOE Organization Act and I intend to uphold that mandate.

Mr. Chairman, before setting out for you aspects of my personal background and experiences which have influenced my approach to the Government and to energy policy, I would like to assure you that the President has nominated me to be a full-time Secretary of Energy, not a caretaker. If confirmed by the Senate as Secretary of Energy, I expect to establish and carry out the national energy policy goals of the President and of the Congress.

I intend to apply vigorous leadership to the management of the Department. As the manager and custodian of our critical weapons production facilities and our world-renowned national laboratories, I intend to aggressively pursue the national security and research and development goals set by the President and by the Congress.

My background is that of a westerner. Born in 1939 in Los Angeles, I grew up in southern California. I attended public schools and in 1957 I entered Stanford University, where I graduated with an economics degree in 1961. I then obtained my law degree at Hastings College of Law in 1964. That is a part of the University of California. I met my wife Lois while we were both attending law school.

Upon graduation from law school, I worked as a criminal prosecutor in the Ventura County district attorney's office, and in 1966

I made the decision to open my own law office in Walnut Creek, CA. From that point on, I was a sole practitioner in the area of general business law until 1980. In addition to my practice of law, I developed and invested in California real estate.

In the 1970's, Lois and I sat in the gas lines with the rest of America. We added insulation to our attic and we wrapped our water heater in an insulation blanket. I experimented with solar film on the windows of the buildings that I owned and I installed economy cycles in the air-conditioning units working in those buildings. I listened for hours to salesmen selling energy efficient products to my clients and to me. I learned about R-factors and I learned what an R-19 is, and I watched my utility bill climb.

The point is that I, like the rest of America, learned in the seventies that we would never again be able to take our use of energy for granted. What we in Walnut Creek were doing was like a ripple on a vast lake compared to decisions some of you here today were making in Washington, DC. The challenge was great, but together we began to meet it. The country made a start toward the end of energy dependence.

In 1981 when the President was elected, my family and I came to Washington to work with the administration, first in the White House and then at the Department of Defense as Assistant Secretary of the Navy, where I managed the personnel matters of approximately 1,247,000 active, reserve, and civilian persons on a day to day basis with a budget of approximately $26 billion.

The Navy, as some of you know, employs over 36,000 scientists in its programs. The energy-related duties at the Navy Department were many, including the Naval Petroleum and Oil Shale Program, the Nuclear Power Officer Programs, the Navy's Energy-Related Scientific Community, and the Nuclear Weapons Programs.

In 1983, the President asked me to return to the White House as Special Assistant to the Chief of Staff. In that capacity, I conducted a confidential management review of the Offices of Communications, Press, and Public Liaison. After assisting in a reorganization of the staff functions, I was named to my current position as Assistant to the President for Presidential Personnel in the spring of 1983.

With this background in mind, I would like to briefly discuss this administration's energy policies which I intend to pursue with your counsel and help if I am confirmed. In October 1983, 10 years after the 1973 OPEC oil embargo, President Reagan submitted to Congress the fourth National Energy Policy Plan.

In it he spelled out our goal to achieve an adequate supply of energy at a reasonable cost. The strategies defined by that report to reach the goal are as follows:

First, we seek to minimize Federal control and intervention in energy markets, while maintaining public health, safety, and environmental quality.

Our second strategy seeks a balanced and mixed energy resource base, ranging from oil, natural gas, coal and nuclear to hydroelectric power, solar, wind, ocean thermal energy conversion, biofuels, and geothermal energy. In addition, I want to stress to you that I consider that conservation and efficiency gains are also energy resources.

By a balanced energy resource base, the administration does not imply specific numbers, but rather an efficient, flexible system in which the mix of energy supplies is appropriate to support economic growth and adequate to permit producers and consumers to choose freely among a wide range of energy options.

Balance and diversity avoid undue dependence on any single energy source. In seeking this balanced and mixed supply, we are working to explore and expand the energy frontier through research and development. We want to expand the technological and scientific boundaries and improve opportunities for the imagination, innovation, and initiative of Americans to "homestead" the energy frontier.

President Reagan's decontrol of crude oil, gasoline, and propane prices in January 1981 is illustrative of our strategy of minimizing Federal controls. That action resulted in increased drilling, discovery, and production; and consumers have reaped the benefits of a 20 to 25 percent decrease in the real price of gasoline.

Other initiatives taken in line with this strategy include introduction of natural gas price deregulation legislation in 1983; passage of the landmark Nuclear Waste Policy Act in 1982; and introduction of legislation to reform the nuclear licensing process during the last Congress.

In 1985, President Reagan is scheduled to submit the fifth National Energy Policy Plan. If confirmed by this Committee as Secretary of Energy, I intend to meet personally with members of Congress, State and local governments, and the general public to seek ideas on what our nation's energy policy should be for the second ten years after the 1973 embargo. Drawing on your views and the views of others, I intend to provide a consensus of recommendations to the President as to the future of our Nation's energy policy.

I would also like to emphasize, Mr. Chairman, that I fully recognize the importance of energy to America's economic growth and national security. We need to use energy wisely and we need strong and efficient energy producing industries. This combination will help ensure that we can continue to lessen our vulnerability to energy disruptions and their economic impacts, while meeting our obligations as a member of the community of nations and the leader of the free world.

Finally, Mr. Chairman I want to commit to you and to each member of this committee and to the Congress that if I am confirmed I will remain open and accessible to a broad spectrum of views on energy issues from all of you and from all of the American people whom we both represent.

This concludes my formal remarks. I have submitted detailed information on my qualifications, experience, and financial affairs. I will be pleased to attempt to answer any questions you and the committee may have.

Thank you.

[The prepared statement of Mr. Herrington follows:]

Statement of

John S. Herrington

before the

Senate Committee on Energy and Natural Resources

Washington, D. C.

January 31, 1985

STATEMENT OF JOHN S. HERRINGTON

Mr. Chairman and Members of the Committee, I appreciate the opportunity to appear before you today as President Reagan's nominee for the position of Secretary of Energy.

Let me emphasize at the outset that I recognize that, if confirmed as Secretary of Energy, in addition to answering to the President of the United States, I will be responsible to this Committee and the Congress. I intend to carry out my duties as Secretary in a spirit of cooperation.

I also recognize the statutory mandate Congress has established for the Department of Energy in the DOE Organization Act, and I intend to uphold that mandate.

Mr. Chairman, before setting out for you aspects of my personal background and experiences which have influenced my approach to government and energy policy, I would like to assure you that the President has nominated me to be a full-time Secretary of Energy, not a caretaker. If confirmed by the Senate as Secretary of Energy, I expect to establish and carry out the national energy policy goals of the President and Congress. I intend to apply vigorous leadership to the management of the Department. As the manager and custodian of our critical weapons production facilities and our world-renowned national laboratories, I intend to aggressively pursue the national security and research and development goals set by the President and the Congress.

My background is that of a westerner. Born in 1939 in Los Angeles, I grew up in Southern California. I attended public schools and in 1957 entered Stanford University, where I graduated with an Economics degree in 1961. I then obtained my law degree from the University of California, Hastings College of Law in 1964. I met my wife, Lois, while we were both attending law school. Upon graduation from law school I worked as a criminal prosecutor in Ventura County; and in 1966, I decided to open my own office in Walnut Creek, California. I was a sole practitioner in the area of general business law until 1980. In addition to my practice of law, I developed and invested in California real estate.

In the 1970's, Lois and I sat in the gas lines with the rest of America. We added insulation to our attic, and we wrapped our water heater in an insulation blanket. I experimented with solar film on the windows of buildings I owned, and I installed economy cycles in air-conditioning equipment. I listened for hours to salesmen selling energy-efficient products to my clients and to me. I learned about "R-factors," and I watched my utility bill climb. My point is that I, like the rest of America, learned in the 70's that we would never again be able to take our use of energy for granted. What we in Walnut Creek were doing was like a ripple on a vast lake compared to the decisions some of you here today were addressing in Washington, D. C. The challenge was great, but together we began to meet it. The country made a start toward the end of energy dependence.

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The strategies identified to reach the goal are as follows: first, we seek to minimize Federal control and intervention in energy markets, while maintaining public health, safety, and environmental quality.

Our second strategy seeks a balanced and mixed energy resource base, ranging from oil, natural gas, coal, and nuclear; to hydroelectric power, solar, wind, ocean thermal energy conversion, biofuels, and geothermal energy. In addition, I consider that conservation and efficiency gains are also energy resources.

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In 1985, President Reagan is scheduled to submit the fifth National Energy Policy Plan (NEPP-V). If confirmed as Secretary of Energy, I intend to meet personally with Members of Congress, state and local governments, and the general public to seek ideas on what our nation's energy policy should be for the second ten years after the 1973 embargo. Drawing on your views and views of others, I intend to provide a consensus of recommendations to the President as to the future of our nation's energy policy.

I would also like to emphasize that I fully recognize the importance of energy to America's economic growth and national security. We need to use energy wisely and we need strong and efficient energy producing industries. This combination will help ensure that we can continue to lessen our vulnerability to energy disruptions and their economic impacts, while meeting our obligations as a member of the community of nations and leader of the free world.

Finally, Mr. Chairman, I want to commit to you and each Member of this Committee and the Congress, that if confirmed I will remain open and accessible to a broad spectrum of views on energy issues from all of you and from the American people whom we represent.

This concludes my formal remarks. I have submitted detailed information on my qualifications, experience, and financial affairs. I will be pleased to attempt to answer any questions you and the Committee may have.

The CHAIRMAN. Thank you, Mr. Herrington.

We will observe on the first round of questioning a 10-minute limitation. We will not limit anybody on the second round. I hope that we can, by that means, spread the available time to members as they have arrived.

First, let me turn to Senator Johnston.

Senator JOHNSTON. Thank you very much, Mr. Chairman. I just have a couple of questions.

Mr. Herrington, we have a Nuclear Waste Policy Act on nuclear waste, and we have now in place a man whom I consider to be, at least thus far, excellent in the way that he has gone about pursuing those duties. Ben Rusche I think appears to be doing an excellent job. He is the first director we have had for nuclear wastes.

Prior to that time there were acting directors, so it was perhaps understandable that time slipped, that the will of Congress was frustrated, that the program was, prior to Mr. Rusche's coming aboard, I think really badly mismanaged. And I do not altogether blame any one person, other than the fact that we did not have a director in place. It was a ship without a pilot, more or less, and it just drifted.

I hope that you will give Mr. Rusche full support, and I do not think he needs to be encouraged, but if that is necessary I hope you will do that. As I say, I do not think it is necessary.

What that act calls for is what we call a parallel track between putting in place a geologic repository as well as a monitored retrievable storage facility. The monitored retrievable storage facility, the plans for that sufficient to go to contract were supposed to be submitted to the Congress by, I believe it was, June of this year.

They will not make that date. We understand that. But we hope and trust that the new enthusiasm for adhering to the will of Congress and to doing what is necessary to get that MRS facility on line will be pursued.

And I guess my question to you is, will you give Mr. Rusche full support and encouragement, if necessary, and we hope it is not necessary?

Mr. HERRINGTON. Yes, Senator, I will. I too am familiar with Mr. Rusche's background. He is an extremely qualified man.

I would say to you that I believe in the options of both keeping the MRS track open as well as the geologic investigations that are going on. I think that is a good protective measure and I would commit to that.

Senator JOHNSTON. Thank you.

I would also say that I think it is very important for the Secretary of Energy to help preserve what is left of the nuclear option. Economics and the huge delays in building nuclear plants, interest rates, have to a large extent made nuclear energy seem unattractive, economically the wrong thing to do.

I think most of those delays or much of those delays were unnecessary or unrelated to safety and can be avoided with even a greater amount of protection to the public. Now, to be sure this is primarily a job for the NRC, but I think the Secretary of Energy will play a strong role in that. I would simply encourage you to do what you can to preserve the safety of nuclear energy and to try to make it an option for this country.

If in fact oil and gas are finite resources which are playing out rather fast—I can tell you they are in my State—then the basic choice is going to be between coal and nuclear, and I hope there will be at least some choice. I want to promote coal, but we ought to have the option of nuclear power as well, and I hope you will encourage that.

Mr. HERRINGTON. Thank you, Senator. I will.

Senator JOHNSTON. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you. Senator Hecht.

Senator HECHT. Thank you, Mr. Chairman.

Mr. Herrington, as you know, Nevada is the home of the free world's largest laboratory, the Nevada test site. I do want to invite you to visit us at your earliest opportunity.

Could you give us any assurance at this time to alleviate any fears of a change of direction of the Department of Energy? We have thousands of dedicated personnel, many of whom have been involved for over 20 years at the Nevada test site.

Mr. HERRINGTON. Senator, I can. I am familiar through my briefings and other readings with the fine work that is done by the employees in Nevada at the test site and the high morale that they have there. I can give the assurance that we would continue with that program at the test site.

Senator HECHT. Thank you very much.

No further questions, Mr. Chairman.

The CHAIRMAN. Thank you. Senator Bumpers.

Senator BUMPERS. Mr. Herrington, let me ask you first of all, do you think the United States, just in your own opinion based on what you have learned since the President nominated you for this position, do you think the United States could accurately be described as having a national energy policy, and if so how would you characterize it?

Mr. HERRINGTON. I think the answer to the question is yes. I think the national energy policy that is set forth in my statement, which I do believe is a valid goal, is sufficient energy for our population at a reasonable cost. And of course, the several prongs of that policy were in the statement.

One of course is the balanced program, which I think is probably one of the most important parts of that energy policy.

Senator BUMPERS. When you say "balanced," do you mean different forms of energy?

Mr. HERRINGTON. Yes, keeping the options of the country open when we are dealing with depletable assets, such as we are for energy sources.

Senator BUMPERS. Are you familiar with our Fusion Energy Program that we have ongoing now?

Mr. HERRINGTON. Sir, I am not. I am aware of the program, but I am far below the technical level needed to understand the difference between fusion and fission and various nuclear terms. I am aware of the concept.

Senator BUMPERS. So far as you know now, you have no reservations or oppositions to fusion power, do you?

Mr. HERRINGTON. Senator, I have not formed an opinion on fusion or fission or other specific programs within that area of the Department's responsibilities.

Senator BUMPERS. Mr. Herrington, let me ask you this. Do you have any idea of what kind of mix of energy we ought to have, say in the year 2000, 2010? Where is our energy going to be coming from?

Mr. HERRINGTON. I think that speculation is beyond the scope of my knowledge. I would say one of the things I hope to do if I am confirmed as Energy Secretary is build on the base that you on the committee and some of the other experts in the field have started.

We have in the last 10 years, I think, done a marvelous job in this country of addressing a problem that was very serious. We have made a wonderful start. We are ahead of projections that were made back in 1973. I remember the feelings that were described here this morning that we were hostage. I had those feelings personally. There was a lot of despair in this country, but we got busy and really addressed the problem.

I want to build on that base.

There are experts far more qualified than I to render an opinion on where we are going in the year 2000, but I intend to listen to those experts and also listen to the men and women who have been foremost in this field for so many years.

Senator BUMPERS. There are a whole host of possible options open to us in the future for what we are going to do the day the fossil energy supply, especially oil, runs out, and natural gas. Now that narrows our options very dramatically on our energy sources, how we are going to handle transportation problems in the country and so on.

At this very moment of course the country is in a rhapsodic state because gasoline is averaging about a dollar a gallon. There is a glut. Oil prices and natural gas prices have been in a free fall, and quite frankly, that is one of the reasons we have enjoyed a very low inflation rate in this country, because of our energy costs.

I am going to come back to energy costs in my State a little bit later, which is a hot topic there, but my question is: Do you think the U.S. Government right now ought to be funding research in some of these areas, from solar, fossil, ocean, thermal, whatever? Do you think we ought to do that? Or do you think we ought to take a hands-off policy and depend on the private market to do that for us?

Mr. **Herrington**. If there is one thing that——

Senator **Bumpers**. Let me add one additional point to that. If the private sector has shown a consistent disinclination to do that, do you think it is sufficiently important for the U.S. Government to do it?

Mr. **Herrington**. The simple answer is yes, but I want to clarify it. If there is one thing I have learned in my business background, it is that things go in cycles. As Senator Johnston said this morning, you are up, you are down, things change.

You must always be prepared for future eventualities, and to foreclose one area or another area I think would not be prudent. So I think the only debate is, How much? And that is worked out in budgets before this committee. I think we must keep our options open.

You discover things through research and development the same way that you discover things at our great national labs. Things that are discovered spill over into private industry and are beneficial, provided the apparatus for technology transfer is there.

So, yes, I do feel there is a bona fide Government purpose in there.

Senator **Bumpers**. Just as there is funding the National Cancer Institute or the National Institutes of Health where the Government issues grants to find new medical breakthroughs, the health of the country, the physical health of the country is that important to us?

Mr. **Herrington**. Yes, sir.

Senator **Bumpers**. It seems to me the future economic well-being of this country, which is totally dependent on energy supplies, the availability of them and the price, is almost equally important in a slightly different and less humane way, I suppose, but one of the things obviously that has concerned me is the tremendous cutbacks we have made.

I understand the budget constraints, and I am going to do everything I can to help out in that department. But I have been concerned, because this energy policy we have right now is dependent upon a glut of oil and natural gas, and unlike you, I do not think we have a national energy policy. I think it is a real tragedy.

I used to be in the cemetery business, and I got out because it is tough to sell cemetery lots to healthy people, and I see a corollary to what is going on right now. [General laughter.]

Senator **Johnston**. And impossible to sell to dead people.

Senator **Bumpers**. And impossible to sell to dead people. Mr. Chairman, how much time do I have left? I have another line of questioning I want to get into.

The **Chairman**. I think about 6 minutes left. Four minutes left. Excuse me.

Senator **Bumpers**. Mr. Herrington, I am not quite as enthusiastic about preserving the nuclear option, as my distinguished colleague from Lousiana is, and as you know, at nuclear power plants, the cost overruns have just been staggering, the environmental problems, the technical problems with them have been staggering.

Let me just ask you first, do you have any inclination to try to crank up the breeder reactor again?

The **Chairman**. Which one?

Senator **Bumpers**. Clinch River breeder.

Mr. **Herrington**. I think that is a bona fide question. The vote, I think, was a major vote in the Congress to end Clinch River.

Senator **Bumpers**. Just leave it right there if you want to.

Mr. **Herrington**. I want to say something more, because it relates to the last question. I would like to say that to go a step further, to say we do not want breeder reactor R&D is taking it too far. We need the option open. We need to balance the program.

Senator **Bumpers**. That is a good answer, Mr. Herrington, and I appreciate that.

On the whole question of nuclear power, have you read this article in Forbes magazine, "Nuclear Folly"? This is not Mother Jones. This is Forbes.

Mr. **Herrington**. Sir, I cannot see the date on that magazine, but I do not recall that article. I may have read excerpts.

Senator **Bumpers**. It is dated February 11. It is the current issue of Forbes. It is a long, detailed condemnation of nuclear power. If you have not, let me strongly recommend it to you, because they point out in this—as a matter of fact they say it is a disaster of monumental scale, and I could not agree more, and my State is about to be sacked economically because of a monumental mistake on the part of the Middle South Utilities, which is a holding company.

They control electricity in Louisiana, Arkansas, and Mississippi virtually. And we have a terrible cost overrun there, and of course, you know, I wish I was in a business where I could make monumental management mistakes and pass my mistakes on to the ratepayers, which is what is about to happen in my State. But do you think it is fairly important in this country that the vast majority of the people have no confidence in nuclear power right now? Do you think perhaps we ought to stop and evaluate the future of nuclear power at least until the people of this country feel more secure about it?

Mr. **Herrington**. That is a question I do not think I have formed an opinion on because the option has never been put to me in that way. Do I think we ought to stop? No, the ongoing projects with heavy sunk costs, I think, need to come on line.

You may get your pause anyway, because I do not see a lot of applications for new permits. But I think evaluation of the industry, and how it relates to the national goals is something we ought to be doing as an ongoing process.

So that is the best way I can answer it.

Senator **Bumpers**. I think that is a fairly legitimate answer, Mr. Herrington. I just think we have been going sort of harum-scarum, assuming nuclear power is good, therefore we ought to continue to push it.

One of the strongest objections I had to Secretary Hodel in the position you are nominated for is, he testified—I believe it was in Mississippi or Louisiana—about the merits of nuclear power and what a great future it has, and yet a couple of nuclear powerplants down on the gulf coast really threaten the economic survival of my State.

A plant that started out to cost about $400 million is up to $3.5 billion now. I think it was a little more than that, $600 or $700 million up to $3.5 billion. The Shoreham plant in New York is up to $5,192 per kilowatt. I do not see how ratepayers can ever scrape up the money. If we were subjected to very much nuclear power in this country at that rate, it would just ravage the country. My time is up. I will be back, Mr. Herrington.

Mr. HERRINGTON. Thank you, sir.

The CHAIRMAN. Thank you, Senator.

Senator Warner.

Senator WARNER. Thank you, Mr. Chairman.

Mr. Herrington, taking a note from my distinguished colleague from Arkansas in the cemetery business, let's see if we can put a tombstone this morning on the rumors that we're going to disestablish the Department of Energy, or even merge it into the Department of the Interior. I have carefully reread your opening statement, and wonder if we can tighten it up a little bit with respect to your views.

You said here you intend to apply vigorous leadership to the management of the Department. Does that vigorous leadership include trying to maintain the integrity and independence of that Department as an ongoing entity?

Mr. HERRINGTON. I would like to share with you, Senator, the guidance the President gave me at the time he asked me to take this job.

Senator WARNER. I would appreciate that. We discussed that in my office, and I would think that would throw a good deal of light on this issue.

Mr. HERRINGTON. I have no other guidance from anybody but our Commander in Chief. He said to me that he would like me to become a candidate for Secretary of Energy, as a full-time Secretary.

Once I am confirmed, if I am confirmed, I will go into the Department of Energy and examine the efficiencies, the programs, the operations, the personnel, and give the President my best opinion as to his options.

Secretary Hodel received the same guidance, although I was not present.

I want to assure you that I have a totally open mind on this issue. I am not unaware of the deleterious effect that rumors of merger and abolishment for an ongoing period of 4 years have on employees. I intend to look at this with an open mind, in the best way possible, and advise the President as to his options.

Senator WARNER. Would you likewise share that advice with the Congress?

Mr. HERRINGTON. I cannot advise the President of his options without full advice and consent of this committee and the Congress, because they are an integral part of the decision process. Nothing in my estimation should be done in furtherance of the future of this Department without the full concurrence of this committee.

Senator WARNER. Well, now, Mr. Hodel has made some public statements that might seem to be slightly at variance with what you are representing to the committee this morning. Would you inform us with respect to your views about his statements?

Mr. HERRINGTON. I cannot speak for Mr. Hodel. He is a good friend of mine. He is a capable administrator. He has done a very good job in this Department. But I would encourage you to ask him his position.

Senator WARNER. I know what his position is. It has been publicly stated. But I assume you are not in favor of pursuing the merger that some have suggested is possible.

Mr. HERRINGTON. I am being very straightforward with you, Senator, in saying I have a totally open mind on this issue.

Senator WARNER. It would be my hope that not too much of your time is used on this venture, and that most of your time would be applied to the duties of the Department.

Turning now to the question of nuclear weapons, as you know, a very substantial part of your budget each year is expended for the production of nuclear warheads. This year it will approximate what percentage of your budget?

Mr. HERRINGTON. I think it is in the area of $6 billion. So it is a major part of the budget.

Senator WARNER. My distinguished colleague on my right indicates it might be as high as $6.3 billion.

Mr. HERRINGTON. I would not quarrel with that, Senator.

Senator WARNER. In connection with my duties on the Senate Armed Services Committee, I have worked on that particular budget as it relates to the oversight of that committee as well as this committee, and I have developed some concern shared by my distinguished colleague from Georgia, Mr. Nunn, that perhaps the accountability to these funds could be tightened up.

The Department of Defense recognizes that it is your budget, and therefore they can order as many as they might wish without prioritizing the dollars that a cabinet officer might have if the cost of these weapons were a part of his or her budget.

We intend this year in the Congress to further examine the means by which to tighten up this accountability, frankly, in the hopes to reduce the amounts of money required for the production of these modern warheads. I hope that you will be cooperative in the efforts to see whether or not we can tighten up this procedure.

Mr. HERRINGTON. Senator, I will. I will also be very interested in the report of the blue ribbon commission that is going to study this under the Nunn-Warner proposal. I hope they will have information that will be beneficial to all of us.

Senator WARNER. I might add that Senator Domenici, a member of this committee, likewise has a keen interest in that issue.

Turning to the question of fossil fuel, it is our expectation that the administration proposal to cut 7 percent from the energy research and development in 1985 level would impair research, particularly in the area of coal. What is behind that decision?

Mr. HERRINGTON. I will tell you honestly that I did not participate in the preparation of the budget for DOE. It will be up on the Hill next week. I consider the budget process an ongoing effort that I will participate in, but I cannot comment on the decisions that led to a reduction in fossil fuel R&D.

I can state that I believe the R&D in the fossil fuel area is important. The program needs to fit in with the balanced approach that we want, and you will find me supportive of fossil fuel R&D.

Senator Warner. As you know, last year the Congress rescinded from the Synthetic Fuels Corporation in the 1985 continuing resolution $750 million for supporting project design to demonstrate the clean use of domestic coal. Now DOE has issued a solicitation pursuant to this congressional directive.

In my discussions with colleagues in your Department, there is somewhat of a lack of enthusiasm to come forward to the Congress and ask for possible funding of one or more of these proposals.

I would hope you approach this with a more open mind in following up on your statement now that you recognize that the clean burning of coal is an integral part of our balanced energy program.

Mr. Herrington. Sir, I will do that. I am aware of that issue, but I am not aware of the particulars of the Synfuel settlement or that particular point.

Senator Warner. Don't worry about that. The Congress set aside $750 million. Senator Byrd, members of this committee, Senator Ford, and others—Senator Ford, a member of this committee, and others, myself and others, worked on this. We are determined to see that those funds are used for the purpose of clean burning of coal research and development, and I look forward to your cooperation in implementing this goal in the Congress.

Mr. Herrington. Thank you, sir.

Senator Warner. I thank the Chair.

The Chairman. Thank you, Senator Warner.

Senator Levin.

Senator Levin. Thank you, Mr. Chairman.

Welcome, Mr. Herrington. I have got a few questions on the subject that Senator Bumpers started with. I would question your position relative to Government involvement in research and development on energy alternatives.

We have seen massive cuts in budgets over the last few years for research and development, I would say draconian cuts in the requests that we get, and then we double or triple the requests, but we have still seen reductions over the years.

For instance in energy conservation and solar, the appropration in fiscal year 1980 was $300 million; in 1985 it is $175 million. That is a cut in half. That is after the Congress has added back to the administration's request. And the same kind of pattern is applied in solar and fossil and geothermal and hydro and other forms of energy alternatives.

I am glad to hear that you are committed to the Government playing an active role in the research and development, at least long-range, long-term research and development of energy alternatives, as I understand your testimony here today.

Is that accurate, that you believe the Government should be an activist in the long-term research and development of energy alternatives?

Mr. Herrington. I do, Senator.

Senator Levin. You did not participate in the budget which we will be getting next week, but you will be participating in future budgets. Can we expect that you will be fighting for adequate budgets for research and development of energy alternatives in future years internally as part of the administration's budget process?

Mr. Herrington. If indicated, Senator, I will.

Senator **Levin**. If indicated by the Commander in Chief or your own views?

Mr. **Herrington**. It is a balancing of where the R&D money goes against budget deficits that all of you are working with, and I intend to be an advocate in that area.

Senator **Levin**. Well, as I understand the budget process, you have got an OMB which advises the President, and the President makes final decisions as to what the priorities are. We also need advocates for particular programs, whether they be energy or housing or health or whatever.

Do you understand your role to be, until that budget comes to the Hill, to be an advocate for energy alternatives?

Mr. **Herrington**. I misunderstood your question. I certainly do, and I intend to be a strong advocate in the OMB process. I can promise you that.

Senator **Levin**. We are going to be receiving a proposal on tax reform, we understand, and whether we receive it or not, there are plenty of folks who are proposing such proposals in the Congress.

Those proposals could have a large impact on production of energy research in the area of energy, energy conservation. There is a lot of tax incentives in the code for energy conservation as well as for energy production.

So that simplification which resulted in the elimination of those kinds of tax incentives could have an impact on the production of energy. Do you have any views as to whether or not tax simplification which results in the elimination of credits, deductions, tax incentives for energy production and conservation is the right way to go?

Mr. **Herrington**. I think first I have to recognize that the tax simplification plan is a long way from being settled. The Treasury plan that has been out in the press has not been embraced by the President as of yet, and I am aware of some of the proposals in that plan, and I would like the opportunity to evaluate them in relation to an energy policy.

If they are to jeopardize an area of energy concern I would look very gravely on that type of a situation.

Senator **Levin**. So you have not yet reached any conclusion in terms of whether you personally inside the administration are going to support simplification of the Tax Code?

Mr. **Herrington**. I think most Americans, including myself, support tax simplification, but what does that mean? I have to begin to look at the difference between eliminating business entertainment accounts and jeopardizing the energy future of the country. I think a balancing must be done, and I would like to look at the issue before I draw a hard and fast opinion on it.

Senator **Levin**. Is it fair to say that you have not yet reached a conclusion on the issue of tax simplification as it affects energy incentives?

Mr. **Herrington**. That is correct, Senator.

Senator **Levin**. Have you been asked to do that as one of your first chores?

Mr. **Herrington**. No, sir, I have not.

Senator **Levin**. If we are going to be getting a tax simplification proposal which will affect energy plus a lot of other proposals—we are looking at energy this morning—would you not think it would have your input as Secretary of Energy?

Mr. HERRINGTON. I would like to do that as soon as possible, Senator.

Senator LEVIN. One of the things you are also going to be looking at is the question of waste sites for nuclear waste, and your Department is looking at literally hundreds of waste sites around the country, salt domes, granite, and a number of other types, I guess.

Some of the areas you are looking at are in the region of the Great Lakes, which is a unique resource. There is no fresh water resource like the Great Lakes in the world. And we have tremendous concern as to the possible impact of waste storage for disposal in the area of the Great Lakes.

Will you be sensitive to the great fresh water shed of the Great Lakes in any of the processes or decisions that you invoke or undertake or make relative to nuclear waste storage?

Mr. HERRINGTON. Yes, Senator, I will. I am aware of your concerns and the Governor's, and I understand the sensitivity of that particular geographical area of the country.

Senator LEVIN. So that will be a real factor in your consideration process, that fresh water source?

Mr. HERRINGTON. Yes, sir, it will.

Senator LEVIN. We have heard, and this may not be accurate or fair, but that the Governor's task force in my State, task force on high level radioactive waste is not certain as to whether or not there is going to be a close working relationship between the States and the DOE on the subject in terms of site selection.

Do you envision the States and the Federal Government working closely on this issue, and will you take steps to make sure that such task forces as we have in Michigan are fully involved and consulted as this process evolves over the next couple of decades?

Mr. HERRINGTON. I will, Senator. Moreover, I think it would be very shortsighted on my behalf or any other Secretary of Energy not to work very closely with State and local authorities.

Senator LEVIN. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Levin.

Senator Evans?

Senator EVANS. Thank you.

Senator DOMENICI. Senator, would you let me have a word with the Chairman? Mr. Chairman, I have a prearranged meeting on the House side at 11 that I must attend. I do not want to delay Senators, but if I am slightly late, and you have finished, could you hold the nominee, and I will not burden the nominee?

Senator HATFIELD. I would make the same request. I have to be out of here at 11.

The CHAIRMAN. I noted several of the Senators here have departed. They have in turn said that they would be back.

Senator DOMENICI. I thank the chairman.

The CHAIRMAN. I assume there will be a number of questions from both those present and those who return. However, if everyone leaves at 11, we may have a gap, but I think Mr. Herrington would probably wait at our request in order that you might have the opportunity to ask your questions of him.

Senator DOMENICI. I thank the Chair.

Senator **Hatfield**. Would the Senator yield?

The **Chairman**. Yes.

Senator **Hatfield**. Do I understand we could continue the hearing after the lunch hour?

The **Chairman**. I hope to finish the hearing before the lunch hour. Based upon the witness list we have, I think it would be entirely possible to do so. It would be my hope to complete it before having to break before lunch, but if the Senator has other commitments at 11, I would suggest he keep those commitments but return as soon as possible.

Senator **Hatfield**. I can say to the Senator I will not be able to return before the noon hour, so consequently I would probably submit——

Senator **Evans**. Mr. Chairman, I would be happy to yield to my colleague.

Senator **Hatfield**. I just have two brief questions.

Senator **Evans**. Surely.

The **Chairman**. Certainly, Senator Hatfield.

Senator **Hatfield**. I apologize for my circumstance. Just two brief questions, Mr. Herrington. You say things tend to move in cycles, and I agree, both in Government and out of Government.

Some of us who have been deeply committed and interested in the area of conservation found a very strong sense of indifference, and that is putting it mildly, within the Department of Energy at one point in time toward conservation programs. And then fortunately we have the cycle moving to where we now have a fairly strong commitment within the Department.

Does that cycle then have any kind of bearing on your administration upcoming in terms of what your attitude is going to be toward conservation programs, and more than giving lip service, more than giving verbal assent, do we see you as one who is going to give vigorous leadership as relates to conservation programs, or are you just going to be passive, or how?

Mr. **Herrington**. Senator, I have never given lip service to anything in my life, and I promise vigorous leadership. I cannot commit to you today what level I would recommend for conservation programs, because I do not know. But I tell you honestly and fairly I am a believer in conservation. I think it is a resource that has as much value to the country as other resources.

I was a user of conservation in the seventies. I found it worked. I had my my two daughters out plugging holes in the building, and we were putting insulation in, and our bills were affected. So I know what you are speaking about, and it will get my attention, and I offer you good faith support of that.

Senator **Hatfield**. I appreciate that. We brought it into the Northwest Power Act for the first time in legislation that energy conservation would be considered as equivalent to a new source of energy, and that is what I hear you saying.

Senator **Hatfield**. The second brief question, OMB has made a proposal that I understand will be incorporated in the President's budget presentation of putting the power marketing agencies, including the Bonneville Power, on an amortization program that would set the interest rates for the payback for that Federal investment at current interest rates, rather than upon the rates in relation to the time when the debt was incurred.

I need not say that that had devastating impact upon the Northwest and probably other regions as well. Did the Department of Energy or is the Department of Energy to your knowledge participating in any estimates or any kind of guidelines or any kind of role in this proposal by the OMB, this dismal, unconscionable proposal by the OMB? [General laughter.]

Mr. HERRINGTON. Senator, I am not aware of the answer to that question. I would be happy to tell you how I would view the particular fact scenario you laid out for us. I think first of all the Government is not in business to make money.

No. 2, I am interested in stability. People make investment decisions, business decisions, personal decisions based on certain given factors, and if those factors later change, they find themselves thwarted.

So in your particular area of the Northwest, we have businesses that are located there. We have retired people who have built their homes based on certain things, and I am sure utility bills may be one of the factors they considered, among others.

In viewing that issue, I would lean toward certainty of payback, but more importantly, stability of the economy and the people is the big question that we need to—people need to rely on the government from year to year.

Senator HATFIELD. Thank you, Mr. Herrington. If you find you have any studies or any documentation on this question in the department, would you submit that for the record here?

Mr. HERRINGTON. Yes, sir, I will.

[The information follows:]

[Attached is a study prepared by the staff of the five Power Administrations that was completed on February 4, 1985.]

ANALYSIS OF OFFICE OF MANAGEMENT AND BUDGET'S REPAYMENT REFORM PROPOSAL

FOR

THE POWER MARKETING ADMINISTRATIONS

Prepared by staff of the:
Alaska Power Administration
Bonneville Power Administration
Southeastern Power Administration
Southwestern Power Administration
Western Area Power Administration

February 4, 1985

EXECUTIVE SUMMARY

The Office of Management and Budget's Repayment Proposal as contained in the passback to the PMA's FY 86 budget requests is as follows: By October 1, 1985, the Power Marketing Agencies (PMAs) should include in their repayment calculations anticipated revenues based on: (1) current Treasury interest rates for interest expense on their unamortized investment--including irrigation assistance; (2) a fixed straight-line repayment schedule for the total unamortized Federal investment over the average service life of the asset or 50 years, whichever is less; and (3) amortization of irrigation assistance on a fixed straight-line repayment schedule.

The OMB later proposed that the unpaid balance of principal for power and irrigation investment shall be repaid annually at a level not less than would be required under a straight line amortization schedule at an interest rate to be set each fiscal year equal to the average yield during the preceeding fiscal year on interest bearing marketable securities of the United States which have terms of 15 years or more remaining to maturity.

- In developing the initial proposal, the Office of Management and Budget (OMB) projected that this proposal would increase Federal receipts by $1.1 billion in FY 1986 and $0.5 billion by FY 1990. The PMAs have prepared preliminary repayment analyses which incorporate the OMB's proposal and found that Federal receipts could increase by no more than $0.9 billion in FY 1986 and by $0.3 billion in FY 1990.
- The OMB projection assumed that during this period that long-term interest rates would fall from their current projected rate of 11.3 % in FY 1986 to 6.0 % by FY 1990.

Adverse Consequences For PMAs In General

- PMA rates would increase by 2 to as much as 190 percent. In many cases, these rate increases will eliminate the PMAs as the best value in their respective regions. Large amounts of Federal power will become unmarketable as customers shift to alternative utilities and sources of energy due to PMA price increases.
- The PMAs would be prevented from developing new markets.
- If Federal power becomes unmarketable, the PMAs will face increasing difficulty in meeting the repayment levels under the OMB proposal.

Adverse Consequences In The Pacific Northwest

To a greater degree than anywhere else in the nation, commerce and industry in the Pacific Northwest depends on a PMA for a stable supply of electric power at predictable prices. If the proposed passback were implemented in its entirety, Pacific Northwest impacts are estimated to include at least the following:

- BPA would probably be unable to meet its obligations to the U.S. Treasury because of large and probably irreversible loss of electric power loads.
- 80 percent or greater wholesale power cost increases to regional utilities which implies 40 percent or greater retail rate increases to residential electricity customers in the Northwest.
- Undermining of the present economic justification for building and operating a vastly expanded intertie system between the Northwest and California, an expansion specificially directed by Congress and aimed at expanding the sharing of electric energy between the two regions.
- The very real danger that efforts would be made on the part of West Coast utilities to enter into short and long term energy contracts with Canada.
- Up to 65,000 regional jobs could be lost.
- This reduction in the region's work force would translate into the overall regional payroll loss of up to $1.3 billion.
- The resulting annual loss in federal, state and local taxes could reach $585 million. The annual loss in federal tax receipts alone could reach $321 million.
- Up to 80 percent of the region's aluminum production facilities could go out of business. These production facilities would probably move offshore. These facilities constitute up to 25 percent of U.S. aluminum production, which in the past has been vital to U.S. defense needs.
- An adverse effect on numerous farms and a substantial reduction in the region's agricultural production capacity, which is heavily dependent on electric energy.
- The effective dissolution of BPA's extensive conservation program as proposed by the Regional Power Council.

The PMAs Cannot Implement OMB'S Proposal by October 1, 1985:

- Legislation changing project interest rates may be needed to preclude legal challenges.
- Rates would need to be adjusted through complex rate processes to increase the PMAs revenues. For example, SEPA is contractually prevented from adjusting some of its rates by October 1, 1985, and the earliest BPA would be able to adjust its rates is July 1, 1986.
- Environmental assessments would be needed, and an environmental impact statement will probably be required for any BPA rate process involving a revenue requirement increase of the magnitude OMB proposes.

1. Economic and Financial Impacts of Implementing OMB's Recommendations

OMB's proposal will require the PMAs' revenue requirements to increase by $1.1 billion in FY 1986 and by $0.5 billion in FY 1990. The following table summarizes these projected revenue requirement increases for each of the PMA's for the period 1986-1990.

TABLE 1
PROJECTED REVENUE REQUIREMENT INCREASES THROUGH FY 1990

Fiscal Year	APA		BPA		SEPA 1/		SWPA 1/		WAPA 1/		Total		
	OMB	PMA	OMB	PMA	OMB	PMA	OMB	PMA	OMB	PMA	OMB	PMA	Diff.
							($ millions)						
1986	NA	10	799	599	121	86	71	74	146	176	1,137	945	192
1987	NA	9	642	550	114	78	67	71	128	168	951	805	146
1988	NA	8	557	501	102	69	61	64	175	180	895	822	73
1989	NA	6	396	287	73	49	44	49	107	137	620	528	92
1990	NA	4	263	78	48	33	29	34	115	132	455	281	174

These projected increases in revenue requirements, if the necessary legislation and administrative changes occur, will create substantial upward pressure on the rates charged by the PMAs and could result in increases in FY 1986 electric rates of between 2 and 190 percent. The following table indicates the anticipated FY 1986 rate increases implied by this proposed change in each PMAs' repayment methodology.

TABLE 2
PROJECTED RATE INCREASES FOR FY 1986

PMA	Percent of Regional Load Served	Percent of Rate Increase
APA	8	32-190
BPA	65	81
SEPA	2	91
SWPA	3-5	82
WAPA	8-10	2-187

ECONOMIC IMPACTS:

Rate increases of these magnitudes can lead to significant economic repercussions within the service areas of the PMAs. The severity of these impacts are directly related to the share of the regional electric power needs which each PMA serves. As the preceding table shows, these market shares range from 2 to 65 percent. The Pacific Northwest will suffer the most severe economic impacts because BPA supplies approximately 65 percent (including exchanged energy) of the Northwest's electric energy needs. Converesly, other PMAs will be the less impacted because they serve a smaller percent of their region's electric energy needs. An assessment of the economic impacts in each PMA service area follows.

1/ OMB's estimates were used in these PMAs' Budget submissions. Subsequent review and analysis has resulted in revised "PMA" estimates.

BPA: The factors that affect BPA's ability to implement the OMB proposal are as follows:

- BPA is currently in the process of revising its rates to comply with rate directives contained in the Pacific Northwest Power Act that must be in effect on July 1, 1985.

  -- BPA has proposed that these rates will be in effect for a 27-month period covering FY 1986 and FY 1987. BPA's proposed rates and estimated loads for major customer classes are shown in the following table.

TABLE 3
PROPOSED RATES

	Priority Firm	Industrial Firm	Surplus Firm
		(mills/kWh)	
Rate	22.7	23.0	29.1
		(Average MW)	
Load			
FY 1986	8949	2718	1024
FY 1987	9106	2901	1024

  -- In addition to the 1024 average megawatts of surplus firm power sales expected at 29.1 mills per kilowatthour, BPA also has an additional 200-300 average megawatts of surplus firm power to market at its much lower nonfirm energy rates.

  -- According to OMB's repayment proposal, repayment levels would increase by $799.0 million and $642.0 million for FY 1986 and 1987, respectively. This represents a 135 percent increase in interest and amortization for FY 1986. However, BPA has explored OMB's proposal and has found that its repayment levels would increase by $598.9 million and $549.6 million in FY 1986 and FY 1987, respectively.

  -- The Pacific Northwest Power Act contains specific rate directives (section 7) which BPA must follow in the development of its rates. These rate directives provide for the manner by which BPA's different costs are allocated to its customer classes (Priority Firm, Industrial Firm, and Surplus Firm).

- BPA cannot expect to recover greater revenues from the sale of power to the Pacific Southwest than under currently proposed rates.

  -- Under the Pacific Northwest Power Act rate directives, the Surplus Firm rate class would normally be allocated a portion of the increase in repayment levels. The Surplus Firm rate class consists primarily of sales of firm power to the Pacific Southwest over the Pacific Northwest-Pacific Southwest Intertie.

- -- Recent experience with the marketing of power to the Pacific Southwest indicates that BPA will find it nearly impossible to recover revenues greater than those anticipated under the currently proposed rate of 29.1 mills per kilowatthour. Even at the current proposed rate level, BPA is projecting the inability to market 20-30 percent of its surplus firm power at the proposed rate.

- -- BPA has not had success in marketing surplus firm power at a rate greater than 30 mills per kilowatthour over the past year, in spite of:

  1. The implementation of an Intertie Access Policy more favorable to BPA.
  2. Water flows through the Federal Columbia River Power System which were conducive to favorable marketing in the Pacific Southwest.

- -- BPA has also been unable to consummate any long-term sales of surplus firm power, with the exception of a single 100 average megawatt sale to WAPA. BPA has no indication that it will be able to make any additional intermediate or long-term sales in the near future at rates above those currently proposed.

- -- Pacific Southwest marketing considerations will dictate the level of surplus firm power revenues. Based on recent experience, rates higher than those currently proposed for surplus firm power will result in no greater revenues than those currently anticipated in BPA's rate proposal.

- The full increase in BPA's revenue requirement will therefore have to be borne by BPA's Pacific Northwest customers; chiefly, the Priority Firm and Industrial Firm rate classes.

- -- The Priority Firm rate class consists of purchases made by publicly owned utilities and Federal agencies to serve their total loads, net of their own generation; and purchases by investor-owned utilities to serve their residential and small farm loads, as provided for in the 9acific Northwest Power Act. The Industrial Firm rate class consists of BPA's direct service industry (DSI) customers, of which approximately 90 percent of the load is from 10 aluminum smelting plants.

- -- Allocating the entire OMB proposal repayment level increase to the Priority Firm and Industrial Firm rate classes would result in the following estimated rates for the period FY 1986-1987:

TABLE 4
RATE ESTIMATE
INCORPORATING OMB PROPOSAL

Fiscal Year	Priority Firm	Industrial Firm
	(mills/kWh)	
1986-1987	29	28

-- These rates assume that the loads for these customer classes remain the same as those estimated under the lower currently proposed rates. However, this is an unrealistic assumption. Both the Priority Firm and Industrial Firm loads have previously exhibited considerable response to higher electricity rates (price elasticity), with the aluminum smelter loads in the Industrial Firm class being considerably more responsive than the Priority Firm loads.

- Increased rates to the aluminum smelter plants in the Pacific Northwest would lead to the permanent closure of three to five of these plants depending on the rate level and alumium market conditions.

-- The Pacific Northwest's aluminum industry is currently facing a U.S. market price for aluminum ingot of 49.7 cents per pound (last week of December 1984). The price has steadily declined from a level of 76.1 cents per pound in January 1984. BPA and some market analysts expect some recovery in aluminum prices to an average of 65 cents per pound in 1985 and 75-80 cents per pound in 1986 and 1987. Other market analysts seriously question that the recovery will reach these levels in 1986 and 1987.

-- The Pacific Northwest's aluminum smelters, and elsewhere, base their decision to operate during any near-term period on an economic determination of whether the price that they will recieve for a pound of aluminum will cover their direct operating costs for producing a pound of aluminum. Under BPA's current rates, the direct operating costs for 6 of the 10 Pacific Northwest smelters in 1985 are estimated to be 68.4 to 72.5 cents per pound.

-- Under current market conditions, these 6 smelters would not normally be operating. However, BPA currently has implemented an incentive rate (a 5 mill per kilowatthour discount) for the region's aluminum smelters. This has allowed most of these smelters to operate and provide BPA with sales of approximately 800 average megawatts which would not have been made without the incentive rate.

-- In the long term, the aluminum smelters will base their decision to continue operating on a permanent basis on whether they expect to recover their total costs, which include plant investment. The total plant costs are approximately 7 cents per pound higher than the direct operating costs in 1985.

-- Under BPA's current rate proposal, without reflecting OMB's repayment proposal, a moderate aluminum price forecast would likely result in 3 to 5 regional aluminum smelters becoming swing plants, operating only when conditions in aluminum markets are good. A more pessimistic, but still realistic aluminum price forecast indicates that these 3 to 5 aluminum smelters would most likely close permanently, with an additional 3 smelters becoming swing plants.

-- The rates shown in Table 4 would result in the permanent closure of at least 3 aluminum smelters in the Pacific Northwest and production cutbacks at other regional smelters by substantially increasing direct operating and total costs for these plants. This represents a reduction of approximately 44 percent compared to loads under the current proposed rates. If lower than anticipated aluminum prices occur, additional smelter closures would be expected at these rate levels.

- Priority Firm loads would also be significantly reduced by higher rates due to OMB's repayment proposal as a result of regional price elasticity effects and increased competition from other power suppliers.

  -- Space heating, water heating, and various industrial loads consititute only a partial list of loads which could be expected to decline significantly due to increased rates. The current estimate of retail mid-term load elasticity in the region is approximately -.2, based on historical data. That is, a 10 percent increase in retail rates results in a 2 percent decrease in loads. Since purchases from BPA represent about 50 percent of the regional retail utilities total costs, a -.2 retail elasticity translates into a -.1 wholesale elasticity for Priority Firm loads.

  -- Higher Priority Firm rates would also exacerbate the current problems faced by the region's irrigation farmers leading to reduced loads and revenues from this sector.

  -- Priority Firm loads would also be reduced because of the increased incentive provided by higher Priority Firm rates for BPA firm power customers to terminate their power sales contracts with BPA and seek other more economic sources of power, specifically from Canada. Canadian utilities have large amounts of low cost surplus power available. Pacific Northwest utilities would likely expand their efforts to substitute Canadian power for BPA power. In addition to further reducing Priority Firm loads, this could substantially increase friction between the Pacific Northwest and Canada.

- Higher BPA rates due to the OMB repayment proposal would result in significantly lower loads and, in turn, even higher rates.

  Table 5 shows the estimated reduction in the loads contained in Table 3 without accounting for any alternate supply from Canada.

TABLE 5
ESTIMATED LOAD REDUCTIONS

Fiscal Year	Priority Firm	Industrial Firm
	.......(Average MW).......	
1986	446	1174
1987	516	1273

  -- Since most of BPA's costs are fixed and do not vary with the level of loads served, the rates shown in Table 4 would have to be increased to recover the virtually fixed revenue requirement from fewer loads. The rates based on the reduced loads are shown in Table 6.

TABLE 6
RATE ESTIMATE
INCORPORATING ELASTICITY EFFECTS FOR SOME LOAD REDUCTION

Fiscal Year	Priority Firm	Industrial Firm
	............(mills/kWh)............	
1986-1987	34	33

- At the higher rates, at least two more regional aluminum smelters would no longer be economically viable and would close permanently. This represents a reduction of approximately 47 percent compared to loads under the current proposed rates. Again, lower aluminum prices would result in a larger number of smelter closures. There would also be additional elasticity effects on Priority Firm loads. The total reductions in loads from those in Table 3 are shown in Table 7 and the resulting BPA rates are shown in Table 8. The load reductions include an assumed 300 average megawatts of alternate supply to the Priority Firm customers from Canada.

TABLE 7
ESTIMATED LOAD REDUCTIONS

Fiscal Year	Priority Firm	Industrial Firm
	............(Average	MW)............
1986	1070	1248
1987	1106	1372

TABLE 8
RATE ESTIMATE
INCORPORATING ELASTICITY EFFECTS FOR HIGHER LOAD REDUCTION

Fiscal Year	Priority Firm	Industrial Firm
	............(mills/kWh)............	
1986-1987	41	40

- Even at rates that are 80 percent higher than BPA is currently proposing, it is not clear that loads would be stable enough to allow the recovery of the additional $599 million required by the OMB repayment proposal.

  - At an Industrial Firm rate of 40 mills per kilowatthour, at least 5 of the Pacific Northwest aluminum smelters would be closed permanently. It is also likely that 3 of the remaining 5 aluminum smelters would also close permanently or, at the very least, become swing plants that operate only when conditions in the aluminum markets are good. With any long-term continuation of the recent softness in aluminum prices, it is possible that 9 of the BPA-served aluminum smelters would close permanently.

-- Priority Firm rates over 40 mills per kilowatthour are considerably beyond the historical range on which elasticity estimates are based. It is certainly possible that elasticity responses to these substantially higher rates could be greater than the historical estimates would indicate.

-- Competition with Canada and other potential suppliers for sales in the Pacific Northwest would be virtually impossible at this level of rates. Regional utilities would do everything in their power to break their power sales contracts with BPA in order to gain access to the available and less expensive power supplies within and outside the region.

-- Therefore, even at this level of BPA rates, there is no assurance that sufficient loads would remain for BPA to serve that would allow the recovery of the additional $599 million resulting from implementing OMB's proposal during FY 1986.

- The high level of BPA rates due to the OMB repayment proposal and the subsequent aluminum smelter closures and other load reductions would result in severe impacts on the economy of the Pacific Northwest.

-- The closure of 5 aluminum plants in the Pacific Northwest would result in a direct employment loss for the region of approximately 3,500 to 4,000 jobs. Also, while load reductions in other regional industries would imply a large measure of fuel switching, they would also result in an additional direct regional employment loss due to reduced economic viability with increased energy costs.

-- The ultimate annual regional economic effects of the closure of 5 regional aluminum smelters and other regional load reductions (at 33 mills/kWh) would be:

TABLE 9
EMPLOYMENT AND TAX IMPACTS

	Losses in			
	Employees	Payroll	Federal Taxes	Taxes 1/ State & Local
		($ millions)		
Direct reduction	10-14,000	250-350	81-114	49-65
Total reduction	50-65,000	1,000-1,300	265-321	198-264

-- The direct employment reductions were estimated based on the DSI plant closures and industrial job losses implied by load reductions after accounting for fuel switching. The indirect employment reductions were estimated by applying a multiplier to the direct employment impacts. Payroll and tax impacts were estimated by using U.S. and regional averages for payroll per worker and effective tax rates. Additional aluminum smelter closures and BPA rates greater

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1/ Includes personal income and business taxes at both Federal and state levels, Federal and state unemployment taxes, and social security taxes. Excludes property taxes at the state and local level.

- than 33 mills per kilowatthour would result in proportionally higher employment and tax impacts.
- The employment reductions directly resulting from the 5 DSI plant closures would be experienced immediately. However, the remaining direct and all the indirect employment reductions would be experienced over a period of several years, as end use electricity consumers make both short- and long-term adjustments to the higher electricity rates.
- Including indirect employment impacts, the closure of an additional 3 aluminum plants in the region for a total of 8, could add 1 percent to the unemployment rate in Washington and Oregon. That is, the two-state unemployment rate would rise from 8.8 to 9.8 percent. The employment tax impacts represent permanent losses to the region. Non-aluminum plant direct and indirect impacts in the long-term may represent some transfers to other regions. Such transfers may reduce the impacts at the national level.

- Finally, the OMB proposal could have significant impacts on other BPA activities and programs.
  - Under the OMB proposal, the Priority Firm rate would be at a level that would almost completely eliminate the net benefits of the residential exchange program enabled by Section 5(c) of the Pacific Northwest Power Act. This would cause a major rate increase to residential and small rural customers of the private utilities in the region that are currently benefiting from the exchange program.
  - Substantially depressed loads due to the increased costs of power in the Pacific Northwest will put the future of several power generating facilities that are now expected to be needed and cost-effective to serve regional loads into serious question. These resources include WNP-1, WNP-3, and the Colstrip Project.
  - Rapid increases in the cost of surplus firm and nonfirm energy to Southwest purchasers is likely to make the Pacific Northwest - Pacific Southwest Intertie expansions recently approved by Congress less viable, resulting in increased Pacific Southwest dependence on fossil fuels, a decrease in beneficial exchanges between the Northwest and Southwest, and a less flexible electric power system.

- Summary
  - BPA is currently facing a situation where it is highly unlikely that it will successfully market power to the Pacific Southwest at a high enough price or in sufficient quantity to recover greater revenues than are anticipated under currently proposed rates. In addition, aluminum smelters served by BPA would be operating at reduced levels were it not for the incentive rate being offered by BPA. Under current economic conditions, many of these plants will operate only intermittently and may close permanently.

-- BPA is also facing increased competition from Canada and other sources for the marketing of power within the Pacific Northwest. Under these conditions, it may be impossible to recover the more than $1.1 billion in FY 1986-1987 that is required by the OMB repayment proposal. The higher rates that this proposal would require could reduce BPA sales to such a degree that total revenues could actually be reduced from current projections. The rate increases and resulting load reductions would produce an economic hardship in the Pacific Northwest. The unemployment rate in Washington and Oregon could increase by up to one percent and result in a substantial reduction in tax receipts at the regional and national level.

-- Other impacts of the OMB proposal would be the potential termination of WNP-1 and -3, a reduction in the viability of Congressionally authorized Intertie expansions, and the elimination of the benefits of the residential exchange program provided for in the Pacific Northwest Power Act.

OTHER PMAs: The economic effects of changing the PMA repayment policy could be as follows:

- SWPA: A revenue increase of $74 million in FY 1986 could nearly double SWPA's current revenue projection of $88 million.

  This change could lead to a 82 percent increase in power rates from 2.8 cents per kilowatthour to 4.9 cents per kilowatthour.

TABLE 10
SWPA'S RATE INCREASES

	Fiscal Year				
	1986	1987	1988	1989	1990
	....	....	(percent)	....	....
Percentage Increase over current Rates	82	77	70	53	37

  The loss of most, if not all, customers and sales in Kansas and Louisiana could result.

  SWPA has made a concerted effort to implement the widespread use principle of the law by extending the sales into areas remote to its transmission system. These sales require wheeling of power over other utility transmission systems. The associated wheeling charges bring the present delivered cost of SWPA to premium market value. An increase in power costs could result in the delivered cost of Federal power being in excess of market value.

- WAPA: A significant increase in the cost of Federal power could increase the cost to the ultimate consumer to a level which would exceed the costs charged by other regional suppliers.

  WAPA also supplies a significant portion of the requirements of several military installations. An increase in WAPA's rates could increase the cost of power to the military installations. Approximately 4 percent of WAPA's total energy sales and revenues are to Federal agencies (about 2 billion kWh and $35 million in FY 1984).

If the resulting Federal power rates exceed market value, WAPA could lose some sales and customers to other regional suppliers.

WAPA's transmission rates for the southern portion of the Pacific Northwest-Pacific Southwest Intertie could increase up to 570 percent.

- APA: Increase in APA Snettisham project rates by 4.7 cents per kilowatthour or by 190 percent in FY 1986 could result.

The drastic increase in wholesale power rates could result in a retail rate increase of about 67 percent to the ultimate consumers in the Juneau area.

A rate increase of this magnitude could result in a significant loss of sales over time as consumers seek alternative energy supplies thereby reducing the demand for Federal power.

- SEPA: SEPA provides its preference customers with between 10 to 15 percent of their total load and 2 percent of their area's power. The OMB proposal will increase SEPA's rates by 78 percent in FY 1986 and falling to 30 percent by FY 1990 as shown below:

TABLE 11
SEPA'S RATE INCREASES

	Fiscal Year				
	1986	1987	1988	1989	1990
	(percent)				
Percentage increase over current rates	78	70	63	44	30

The major economic impact in SEPA's area is the increase in preference customers rates. SEPA's increased power cost might still be lower than the alternative source of power available to Southeastern's customers. However, it could increase the cost of power to levels commensurate with other regional suppliers, if OMB's assumptions concerning the decline of future interest rates does not occur.

SEPA also is prohibited by contract from raising rates in some systems except on specific dates. The increased costs allowed by present contracts assuming rapid implementation of the OMB proposal will not allow SEPA to immediately recover all its increased costs. These effects are summarized in Table 12.

TABLE 12
ANNUAL EFFECTS ON SEPA OF IMPLEMENTING OMB'S PROPOSAL

	Fiscal Year				
	1986	1987	1988	1989	1990
	($ millions)				
1. Current Revenues	110.4	110.41	110.4	110.4	110.4
2. OMB Proposed Revenues	196.4	188.4	179.6	159.1	143.4
3. Increased cost	86.0	78.0	69.3	48.7	33.0
4. Cost increases allowed by Contract	64.4	57.0	50.2	35.0	33.0
5. Difference -- annual costs not allowed to be recovered.	21.6	21.0	19.1	13.7	0.0

2. Legislative Requirements for Implementing OMB's Recommendations.

The legislative requirements for implementing OMB's proposal regarding a fixed amortization method, increased interest rates and irrigation assistance are as follows:

AMORTIZATION PERIODS

Few projects have a statutorily established amortization period. Amortization methods have generally been established administratively.

To change the amortization method used for the outstanding Treasury bonds, legislation would not be needed. To implement this change, BPA and Treasury would have to renegotiate the bonds' terms.

INCREASED INTEREST RATES

Legislation is required to increase interest rates for some of the PMAs'projects, specifically:

- 1 project in the BPA system -- the Third Powerhouse, Grand Coulee.
- 7 projects in the WAPA system.
- 2 projects in the APA system.
- None in the SWPA or SEPA system.

Legislation is probably not required to increase interest rates for the remaining projects.

IRRIGATION ASSISTANCE

Limitations have been placed on irrigation assistance from the Columbia Basin Project under the legislation for the Third Powerhouse-Grand Coulee. The limitation is that "total assistance to all irrigation projects, both existing and future, in the Pacific Northwest shall not average more than $30,000,000 annually in any period of twenty consecutive years." Payments for irrigation assistance are not scheduled until FY 1997. However, it is probable that some payment in excess of $30,000,000 could be made in FY 1986 as it appears no payment at all was made in FY 1983 or FY 1984 and none is planned for FY 1985.

The meaning of "assistance" appears to apply to the cost of the project allocated to power. There is no indication that the $30,000,000 limitation necessarily includes any interest. If that is the case, then interest could be imposed over and above the $30,000,000 limitation.

There is a practice of not charging interest on irrigation assistance. While statutes provide for payment of interest on investment in portions of projects allocated to electrical power and industrial or municipal water supply, they do not provide for payment of interest on investment in those portions of projects allocated to irrigation, e.g., Reclamation Project Act of 1939, 43 U.S.C. 485; Colorado River Storage Project Act of 1968, 43 U.S.C. 1543; Sec. 5 of Colorado River Storage Project Act of April 11, 1956, 70 Stat. 105, 107-109. In addition, Federal loans to irrigation districts and other public agencies that finance construction of Irrigation distribution systems shall be interest free. No statutory prohibition has been identified except for distribution systems (Act of July 4, 1955, Ch 271, 69 Stat 244).

3. Ability to Implement These Changes by October 1, 1985.

In this section the PMAs' ability to implement OMB's proposal is analyzed:

RATE ADJUSTMENT PROBLEMS

The rate adjustment problems of implementing OMB's proposal varies by PMA as follows:

BPA: BPA's statutes require a rate change by July 1, 1985. Even with legislation, BPA cannot take the necessary steps to implement a rate adjustment which is consistent with the OMB proposal.

If BPA must meet July 1, 1985, with new rates which reflect OMB's proposal, then the following must be addressed:

- o Explaining to BPA's customers and public the complexity of the change.
- o Providing adequate opportunity for BPA's customers and public to examine and comment on the proposed rates.
- o Obtaining of FERC's permission to file after May 1, 1985, but by June 1, 1985, for this rate adjustment.

Other PMA's: Three PMA's would all have to initiate rate proposals under 10 CFR 903 on each of their projects (8 for WAPA, 2 for SWPA, 2 for APA). These could each take approximately six months to complete.

It is the view of the PMA's that any initiation of such a changed rate proposal could occur only after the present direction of DOE Order RA 6120.2, confirming present administratively established interest rates (Sec 8(c)(1)) had been changed. It is also a consensus that such a rate increase could require at least an environmental assessment, consistent with DOE notice of February 23, 1982, Section D, Typical Classes of Action.

SEPA could be unable to implement changed rates in FY 1986 because of contractual arrangements that only allow rate increases on specific dates.

The customers of the PMA's have an opportunity to terminate contracts, an action which might occur with a major rate increase.

DOE ORDER RA 6120.2 REQUIREMENTS

Any change to the existing practices of establishing interest applicable to unamortized investments could require a change in DOE Order RA 6120.2. The process will require a publication of the proposed changes in the Federal Register, to be followed by an information forum, a comment period, a consideration of the comments, and the publication of the final proposal. This has been accomplished in a period of about six months in the most recent change of October 1983 which was far less significant than the present proposal.

Other changes could be required in RA 6120.2 for priority of revenue application and perhaps for amortization methods.

A National Environmental Policy Act (NEPA) compliance for RA 6120.2 could be required because of the connected actions which could result from this; that is, rate increases far in excess of the rate of inflation.

NEPA CONSIDERATIONS

The DOE guidelines of February 23, 1982 call for an environmental assessment where a rate increase exceeds the rate of inflation. This could trigger an environmental assessment for all the PMA's for proposed rate increases. DOE's completion of an environmental assessment or environmental impact statement on the amendment to RA 6120.2 would not relieve each PMA of its separate NEPA responsibilities.

An environmental assessment would be required for all PMA rate increases under the OMB Proposal. BPA would probably require an environmental impact statement, taking more than a year.

For BPA, an environmental impact statement is more likely than for the other PMA's. The DSI's share of the BPA load, the impacts on river operation if part of the DSI load dropped substantially, the possibility of fuel switching and of changes in generating resources all are potential environmental impacts.

Senator HATFIELD. Thank you. Thank you, Senator Evans.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator.

Senator Evans.

Senator EVANS. Mr. Chairman, let me return to the national energy policy plan. I guess first and fundamentally, how do you view the role of the Department of Energy and the Secretary in building the next national energy policy plan, particularly with relationship to the many other agencies of Government that have some relationship to energy and energy research?

Mr. HERRINGTON. I view our role as one of taking ideas not only from Congress but from citizens, various groups, and attempting to give our best assessment of what the national energy policy plan should be.

So far, that plan in general terms is as I have stated in my prepared statement. It is sufficient energy for the population at reasonable cost. That perhaps is oversimplification, but it is not a bad start.

Senator EVANS. How do you understand the role of the Secretary in building this national energy policy plan with the recognition that there are other agencies of Government that have separate responsibilities in the energy field—for instance the Synfuel Corporation and others?

As we build that plan, what is your relationship to the others in building? Are you a coordinator, contributor, the ultimate policymaker, what?

Mr. HERRINGTON. I think it is certainly not the ultimate policymaker, because I do not presume that. I think it is the role of coordinator and advocate, and also a listener to interests, concerns, and to the members of this committee, and of course it also is the role of efficient management of the program that we have through the Congress decided to go forward with to make sure they work and work well.

But there are many crossovers between the various departments. For instance, there is research going on in several departments that impacts energy. So it is a coordinator, as you say, but more than that, it is the other things I have stated.

Senator EVANS. Do you believe the next national energy policy plan could be improved if it detailed in—or if in more detail it set forth a work plan for, say, the next 2 years or the next short amount of time?

In other words, it may be fine as a broad scale set of goals and as a long term set of objectives, but it seems to me in reading the past versions of the plan, precious little detailed work plans for the next year or two are set forth. Do you think that is an appropriate addition to the overall plan?

Mr. HERRINGTON. I am not sure that I have formed an opinion on that. I have read the plan. I find it useful, but as you say, it is not down to great detail. I think possibly more definition of detail could improve the plan.

Senator EVANS. I would suggest it might be useful to look at the Northwest Electric power plan which was developed over the last several years, and which opted for exactly that sort of twofold plan, a 20-year plan, but within it a 2-year work plan, and with the recognition that every 2 years there would be a revision both of the long-term and of the short-term work goals.

In your statement, you talk about conservation and efficiency gains as energy resources. What is your general view in looking at the range of energy alternatives today? Do you feel that most or a few—Where would you place conservation measures in their cost effectiveness and their relationship to other energy alternatives?

Mr. HERRINGTON. I know a lot of thought has been given to that. Where does conservation rank in the scheme? Frankly, I do not have an opinion on that. I do not know. I know that for every energy unit that you save, it is just that much less energy you have to produce.

I think we have a good ongoing program now on conservation that I would like to see continued.

Senator EVANS. As Senator Hatfield pointed out, in the past several years there has been some reduction in that effort while at the same time some considerable escalation in other portions of energy research and development, I think.

There is concern certainly on my part that we may not be giving adequate attention to a portion of our energy field that has even more potential than some of the others on which we are spending a good deal of money.

More specifically, the Residential Conservation Service and the Commercial and Apartment Conservation Service bill will probably be coming before this committee pretty quickly for decision as to whether and under what circumstances to continue them.

One of the requirements of these bills is for utilities to provide free of charge energy audits to the customers as an incentive to both the understanding of what is available in energy conservation and to encourage it. What are your views on that particular proposition?

Mr. HERRINGTON. I have not formed an opinion on that. To be honest with you, I have received offers from both PG&E when I was a resident in California and VEPCO here in Virginia for such an audit. We did take them up on it in California. I thought it was very beneficial. There was no charge for that audit.

I simply do not know the ramifications of a program like that or the cost on a national scale, and I have no opinion on it.

Senator EVANS. A couple of questions were asked on the breeder reactor system. Although Clinch River has effectively been cancelled, it means that the fast flux test facility at Hanford remains really the major operational breeder in the country today. There is a substantial investment in the technology and the physical plant there.

I guess a little more specifically, in addition to the answer you gave to the previous question on breeder reactor research, do you have a feeling on the continued operation and utilization of that existing facility as a key element of that research?

Mr. HERRINGTON. Specifically as to Hanford I do not have an opinion. It would be my intention to advocate the continuation of R&D for breeder reactor technology on some basis. The extent or scope of that I do not have an opinion on, but I think it is necessary as part of our balanced program.

Senator EVANS. Apparently the French and the Japanese and perhaps others have moved considerably ahead of us in the development of the research necessary for commercial operation of breeder reactor plants. The Department, as I understand it, has been trying to further international collaboration but so far without a lot of success.

Do you have any views on the advancement of that concept and how you believe the Energy Department ought to interact with research going on in other countries in this as well as other energy research fields?

Mr. HERRINGTON. Yes; I do. I understand there is some resistance to this type of activity in various sectors, but in my opinion when you get into high cost R&D there needs to be a method of cost sharing worked out, and I think it can be done.

I do not think the world can afford to reinvent the wheel in each country at the cost to the various taxpayers. So I am in general support of that proposition. The scope and level of that effort, in which particular projects, I do not have an opinion at this time on.

Senator EVANS. Two more questions, if I might, Mr. Chairman.

The National Governors Association has taken the lead in drafting a bill that was introduced in the last session of Congress. It would establish or at least give the option for regions of the country to establish regional power planning councils to draw up least effective cost plans for electric energy if they choose to do so. It would be patterned to a degree on the current action in the Pacific Northwest Regional Power Council. The Department opposed the bill last year.

Do you have any views on a bill of this sort?

Mr. HERRINGTON. Senator, I do not. I have an open mind on the question, but I do not feel sufficiently versed in the facts of that particular case to make an intelligent comment on it.

Senator EVANS. Perhaps I will add that to a list of other questions I would like to submit in writing, and perhaps there will be time to take an additional look at that, because it is potentially a very important bill that we will be dealing with.

Mr. HERRINGTON. Thank you.

Senator EVANS. Finally, to follow up on Senator Hatfield's question, with the repayment programs that are now being suggested by the Office of Management and Budget, certain portions of the changes OMB is suggesting perhaps, although there is some argument about this, perhaps could be instituted administratively as opposed to coming to Congress and asking Congress to pass legislation that would establish a new repayment method.

Do you have any intent whatsoever as Secretary to institute or to agree to institute administrative actions that would change the repayment programs, or would you come to Congress with any such program?

Mr. HERRINGTON. I have stated my views on the stability issue. I would have to see the proposals and how they impact, and I would tell you today that I would not do anything administratively in that area that I did not have the full advice and consent of this committee on.

Senator EVANS. Thank you, Mr. Chairman. I will have some other written questions I will submit.

The CHAIRMAN. Senator Melcher.

Senator MELCHER. Thank you, Mr. Chairman.

Mr. Herrington, I have read through your statement, and I have had the pleasure of visiting with you in my office, and as you know, I am impressed with your background in the Navy as Assistant Secretary.

Now, nowhere in your testimony are you putting yourself forward as one especially knowledgeable on energy. Do I read that correctly?

Mr. HERRINGTON. Yes, sir, you do.

Senator MELCHER. Now, when you speak of the President's balanced energy policy, and then refer to the fact that the President is scheduled to submit the Fifth National Energy Policy Plan in 1985, do you envision you will contribute with recommendations to that plan in a substantial amount?

Mr. HERRINGTON. Yes, I do.

Senator MELCHER. It is along that line I would like to ask you the following questions. The administration's budget, which I assume will be presented very shortly, apparently knocks out or knocks down a lot of the research and development and money for fossil energy.

The information we have is that it reduces it by about 70 percent from the amount appropriated last year in the current fiscal year. Now, we have been appropriating around $250 million. I think in the past fiscal year it is $280 million, and the President's budget is going to recommend $80 million. That is a substantial reduction from what we have been spending.

It seems to be a game we are playing here. The Energy Department, the OMB, and the President's budget in the past several years have not recommended very much for fossil fuel research and development, and then we add a very minimal amount that must be left in place.

I guess this is not your fault. Maybe it is not the fault of Hodel. Maybe it is just the President's policy, and everybody has to bow to it.

What is your impression—you have answered some questions while I have been sitting here. What is your impression of the comparable cost for generating electricity from coal as compared to nuclear?

Mr. HERRINGTON. Well, first of all, I would like to say that I do not view the process as a game. I do not accept that. I think there are some very weighty issues of the amount of the deficits we have had over the years, where our economy is, problems that all of you are wrestling with up here on what we are going to do about some serious budgetary matters.

I do not look at it as anything other than a very serious process. The fact that the fossil fuel R&D is cut this time, I admit to you I was not there when it was done, and I cannot tell you whether I would agree with it or not.

On the nuclear versus coal issue, both options need to be explored as best we can. Especially coal, I think, is one of our biggest untapped resources. The Department of Energy and the administration need to encourage more use of coal, and whether you do that by increasing the R&D budget for coal, I have no opinion on.

But I would be a strong advocate of increased uses of coal in our country, but as comparing it to nuclear energy, I simply do not have an opinion on it, Senator.

Senator **Melcher**. Let me say that the most recently completed new coal plants, coal-fired generating plants in my State and in my home county, most recently completed in the whole country, and we accept what they tell us, the power companies tell us that operate them, that it is about 42 to 44 mils, 45 mils, perhaps, is the cost per kilowatt of electricity.

I have no problem arguing with the conventional answer that perhaps the cost of a kilowatt of electricity generated from nuclear on one of the more recent plants is somewhere between 60 and 100 mils. Well, that obviously gives the advantage to the coal-fired plant.

Now, might I point out that while these plants—Colstrip 1, 2, 3, and 4—at least Colstrip 3 and 4 have the latest, finest scrubbers, so that cost is built in there, and it is still the same kilowatt price, 42 to 45 mils, somewhere in there.

There is an Indian reservation 17 miles away with class 1 air quality designation, so you have got to be very careful, and it is clear, it is clear. The pollutants have been cleared. What disturbs me about all this is, we only get 35 to 36 efficiency. We burn that coal, we only get that much efficiency out of burning coal that generates electricity, and you were giving answers to conservation just a few minutes ago that you were for conservation.

Naturally we are all for conservation, but conservation of the greatest magnitude that I can think of would be to change, as far as coal is concerned, change that 35 to 36 efficiency up into the range of, say, 50 percent, then out beyond that, and some R&D that the department has been carrying on indicates that is not just conceivable, theoretically it is possible.

I want to just stress that as you enter this position as the Secretary, this is a very important aspect of the work of the Department of Energy, and it will become a significant part of your duties as I understand it during 1985 to be able to recommend to the President what should be the input on fossil fuel, coal specifically.

As you have just said yourself, you would like to see whether we cannot use coal more, and put it in a meaningful way into the President's recommendations for this Fifth National Energy Policy Plan.

As we spoke, you and I, you said you would like to view one of the facilities of the research and development for better utilizations of coal, which happens to be at Butte, MA the MHD testing facility there.

Now do I understand you correctly, Mr. Herrington, while you would love to proceed immediately to Butte because it's very gorgeous, but you've never been to Butte, have you?

Mr. **Herrington**. Sir, I've never been in Montana with the exception of Yellowstone Park as a family with my parents many years ago.

Senator **Melcher**. And you understand that it's in glorious splendor right now?

[Laughter.]

Mr. **Herrington**. What was the snowfall?

Senator **Ford**. It's very white.

Senator **Melcher**. It's very white. The air is very crisp; 36° below this morning. But despite your enthusiasm for—and your anxiousness for seeing Butte and seeing this facility out there and seeing Montana, you will restrain it for a few months?

Mr. **Herrington**. Sir, if you extend an invitation to me to look at the project at Butte, I would like very much to do it. I understand that some good work is going on there in the MHD project, and I'm interested in the fossil fuel R&D, in determining, as you say, what is the best level and where do we proceed from where we are. And I'm totally open. I don't want to give the impression in my answer that———

Senator **Melcher**. So therefore, you will accept my invitation?

Mr. **Herrington**. If you'll extend that invitation, it will be accepted.

Senator **Melcher**. I am extending it as of this minute.

Mr. **Herrington**. I accept it.

Senator **Melcher**. And I understand your enthusiasm to go immediately, but you will restrain yourself until the streams are clear, the water's low, the trout are hitting on any kind of fly, even though you'd like to go today. [Laughter.]

Mr. **Herrington**. Yes, sir.

Senator **Melcher**. Thank you.

The **Chairman**. Thank you, Senator Melcher.

Senator Heinz.

Senator **Heinz**. Mr. Chairman, thank you.

Mr. Herrington, first I want to apologize that I wasn't able to be here for all of the discussion and opening statements; but I congratulate you on your nomination.

I have had many occasions to work with you and a very special person who is seated directly behind you from where I am seated, Lois Herrington, who up until now I would say has been even more famous than you because of the fine work she has done on behalf of victims and witnesses throughout this country. And I think the country is indebted to you for having chosen her at some point with her assistance as your helpmate in life. She has been a great helpmate to this country, and I must say I have no doubt that in your new capacity—and I don't anticipate any difficulty with your nomination being cleared by the Senate—that you will be a very positive help to the country in your role as Secretary of Energy.

Mr. **Herrington**. Thank you.

Senator **Heinz**. But I do need to get a clearer idea of at least some of the priorities you hope to follow and why. I am advised that OMB is suggesting a research and development—a program for research and development for fossil energy will be cut by 70 percent.

Now that affects coal. Clearly, coming from what is still the third largest coal-producing State, I'm vitally interested in any cuts that might affect our coal industry; and particularly so because, while I wouldn't disagree with the proposition that when we have to save money in the budget, there should be cuts, I obviously am going to be very interested in any cut that seems to unfairly single out coal as opposed to some other areas in your jurisdiction.

On my best understanding, the budget to be proposed on Monday next, February 4, does so single coal out for a 70-percent cut. There is supposedly a cut of 33 percent slated for research and development on nuclear energy. Does that seem to you to be a balanced approach to our energy priorities to cut one area which is, frankly, in terms of usage and expected usage far more important than the nuclear power, and to only cut—not that 33 percent isn't a big cut, but compared to 70 percent it's a small cut, it's less than half, a much larger budget for an energy source that is, by all accounts, scheduled to play for several decades to come, still a fairly modest role in our overall energy supply picture?

Mr. HERRINGTON. Senator, I can't comment on the fairness of the cut. And I'm not trying to avoid the question. But I was not part of the budget makeup this time. I intend to be part of an ongoing process with this committee to determine what the final numbers are. As far as the cut levels being fair between nuclear and fossil, I have to accept what is said here this morning of the 70 percent cut in the fossil. I don't have personal knowledge of that and won't until the budget gets here on the Hill.

Senator HEINZ. If those facts were accurate——

Mr. HERRINGTON. Yes, I don't doubt them.

Senator HEINZ [continuing]. Would you consider that a fair policy?

Mr. HERRINGTON. I simply can't comment on the fairness of the policy, because I don't know the projects that are under way for fossil R&D versus the nuclear R&D projects or in what line items those cuts are coming.

I want to understand with you that I have an open mind on evaluation of these projects in the coming months, and that I am willing to look at these very carefully. I understand the importance of coal in a balanced approach to our energy problems. I am convinced of that.

In 1981 the President said publicly that the United States is the Saudi Arabia of coal. This is a resource and an asset that we cannot overlook. With that in mind, I don't feel I can go farther on that.

Senator HEINZ. If you become convinced that this cut is unfair, will you fight Dave Stockman and OMB?

Mr. HERRINGTON. You will find me an advocate for the positions I believe in.

Senator HEINZ. Does that include fighting David Stockman and OMB? [Laughter.]

Mr. HERRINGTON. The answer is yes.

Senator HEINZ. I thought it would be. I just want the headline to read, "Herrington promises to fight OMB on unfair coal cuts." You understand this?

Mr. HERRINGTON. Let's hope that headline does not happen. [Laughter.]

Senator HEINZ. There is a qualification that you haven't decided whether they are fair or unfair yet. We understand that.

Mr. HERRINGTON. That's correct.

Senator HEINZ. Mr. Herrington, let me take one more moment to alert you to another situation that causes me some serious concern. It's a matter I intend to raise with the present Secretary of Energy, Don Hodel, tomorrow when he's before this committee; but I want to mention it in case the problem remains unresolved, and you are unfortunate enough to have it fall in your lap.

The subject is Three Mile Island, which explains my great interest and concern and why it is also of concern to the Energy Department. As you may well know, the Energy Department has been very good to Pennsylvania and Three Mile Island. Your agency-to-be has undertaken to help us with the radioactive core of the reactor at Three Mile Island, and there has been a very good working relationship and generous commitment of resources to help us work those problems out. But for the last year a key phase of the cleanup at TMI Unit-2 has been scheduled to begin either late this year or in the beginning of 1986, and that's the beginning of the transportation of the damaged fuel from TMI to the disposal site located in Idaho.

An issue has recently surfaced which worries me, that the timetable that is moving that damaged core out later this year, is a timetable that might not be met. And it appears that the casks that are needed, which are very carefully designed to transport radioactive material safely and securely, that the casks, for a variety of reasons, may not become available, even though DOE currently maintains that they will be available.

It has been somewhat difficult to get information from DOE to completely understand what is going on, but I bring this to your attention in case the work we're doing with Don Hodel on this issue doesn't allow him the time or the opportunity to address the issue.

I don't want to take up the committee's time with this problem, but in very broad outline, what was involved is that DOE was planning to have a rail cask made that was similar to the ones used by the Navy to transport damaged fuel. And for reasons that still aren't entirely clear to me, there was a decision made not to use the Navy-type cask—I guess the Navy's got 20, or 21 or 22 of them—but instead to start from scratch and build an all-new cask. And beyond the issue of how and why the decision was made, which in my judgment was a secondary issue, the prevailing situation if the new cask doesn't arrive on time, can't be built on budget and so forth, means that the cleanup effort at Three Mile Island will be further delayed, thereby just tying everybody—the utility, the ratepayers, and the rest of the people—in more knots.

And the statistic that worries me about this is that the normal time for NRC certification of one of these casks is 18 to 36 months. That's just for certification. And apparently this cask is going to be built from scratch, so I'm worried about the situation.

You're not an expert on it, but I wanted to bring it to your attention now in case there is some unfinished business laying on the table upon your confirmation and taking your oath of office.

Mr. HERRINGTON. Based on the facts you've given me, Senator, I would, if confirmed by this committee, look into that matter as a first order of business. If the facts are as you state them, there may be some reason for concern. There may be a perfectly legitimate answer. I simply don't know. But I would assure you that that's one thing that will be looked into immediately

Senator HEINZ. I thank you for your willingness. That's all I can ask of you. I will be questioning Secretary Hodel fairly carefully, hopefully not too lengthily, but fairly carefully tomorrow on this. Thank you.

Mr. HERRINGTON. Thank you.

The CHAIRMAN. Thank you very much, Senator Heinz.

Senator Ford.

Senator FORD. Thank you, Mr. Chairman.

Mr. Herrington, I'm sorry I'm late, but I had to visit with the Secretary, and I found out that this administration is trying to eliminate another department, the Department of Agriculture, and I hope that you'll not preside over the demise of the Energy Department. I'm going to try to prevent that if I can. And I think your conversation, the conversation you had with me earlier was that you have no instructions from the President to do away or are prepared to do away with the Department of Energy, but to make a study of it to see how efficient it is and things that might be recommended to be changed and shifted and that sort of thing.

Mr. HERRINGTON. Yes, sir. And I'm on the record here at the hearing prior to your arrival with that same representation. The study, the look at functions, that's something that a prudent manager should do anyway in any matter.

Senator FORD. Mr. Herrington, what is your opinion about the importance of coal research and development in achieving, as your statement says, "a balanced and mixed supply"?

Mr. HERRINGTON. I have stated earlier, and I would like to repeat it, that coal, to me, offers one of the very best, if not the best, futures for energy production in this country. It's an asset that is plentiful. We are not subject to foreign hostage situations. Technology is there to use it well. We have minor problems in transportation and distribution, and we need some research in clean coal burning, but it is something that must play, by definition, a large part in our future energy picture.

Senator FORD. In your opinion, then, what principally limits our ability to increase the share of coal in U.S. energy supply? Would it be supply constraints or demand constraints?

Mr. HERRINGTON. I think some of the things we do to encourage more use of coal would be to encourage more export of coal. I think that's one thing that the Department of Energy could probably do, and the country could do as a national policy. I think we can look very carefully at—and I want to stress this when I say it—I have a great sensitivity of the health, safety, and environment of our people, but some of the regulations need to be reasonably applied so that they are not burdensome, lest we end up crippling a vital asset that we have, in our efforts to regulate. Some of the work that is being done on burning of coal needs further research and development, both at the preparation stage and the burning stage.

I think that several types of conversion from oil burning to coal burning in some utility plants can be looked at very carefully. But there are a number of things that we can do in encouraging further coal use.

Senator FORD. You made a very interesting statement about greater ability to export coal. Are you aware that it costs more to ship a ton of coal in export than it does to extract it and get it to the train? It costs more in transportation charges to ship a ton of coal than it does to extract that ton of coal and get it to the train or for export.

Mr. HERRINGTON. I don't have personal knowledge of that. I have read it, and I have been briefed on that fact, and that, of course, is something that needs to be worked on.

Senator FORD. Coal is shipped basically by railroad, and that's 40 percent of the total tonnage of all the railroads, and it's about 25 percent of all the income. Coal becomes a whipping boy when it's a captive shipper, not quite as bad as it used to be as far as the trains and the tracks and so forth, because this committee and many of us here have been putting some emphasis on it, but there still are some problems. There is some fine-tuning legislation that I'd like you to look at if you get the opportunity as it relates to the Staggers Act.

There are those who would like to keep it like it is, but there are others who are being devastated by rates. It's a shame you have to ship via truck to get it to another railroad to take it to the Great Lakes to put it on a barge to take it to the ocean in order to export it cheaper than you can put it on the train and just get it to Hampton Roads and take it some place. That needs to be looked at some.

Let's talk about clean coal technology for just a moment, if we may. The Clean Coal Technology Program enacted last year in connection with the hard work of our chairman and others, with the modifications of the Synfuels Program, was agreed to by the administration and by Congress. Is this anything like the kind of program you are referring to in your statement when I quote "expand the technological and scientific boundaries and improve opportunities"?

Mr. HERRINGTON. I don't know if I was referring specifically to that program. I don't have all the details of the Synfuels Program. I was not here when that program was agreed to. I intend to become very familiar with what the agreement was and look into things as best I can. But clean coal technology is a type of program that definitely falls into the statement I made of furthering R&D in the future of clean-burning coal technology.

Senator FORD. Could this program be important—I'm talking about the coal technology portion of the legislation. Could this program be important in bringing about a widespread adoption of technology for the clean use of coal?

Mr. HERRINGTON. I would say yes, Senator.

Senator FORD. Mr. Chairman, I would like to submit for the record and for Mr. Herrington to answer several questions from the Democratic leader, Mr. Robert Byrd.

The CHAIRMAN. Those questions will be submitted, and the response to the questions will be made a part of the record.*

Senator FORD. I thank you, Mr. Chairman, and I thank Mr. Herrington.

How much time do I have left?

The CHAIRMAN. About 3 minutes.

Senator FORD. Let's talk about a very sensitive subject—I don't know whether it's been brought up yet or not—called acid rain.

Mr. HERRINGTON. No, sir, it has not.

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* See appendix II.

Senator **Ford**. Tell me what you think about the acid rain controversy.

Mr. **Herrington**. Like most Americans, I'm concerned about acid rain, but I have to tell you honestly, I don't know what causes it, I don't know what it does, and I don't know how to fix it. Those are the three things. But in reading articles and in reading journals that have come out, I'm not sure the scientists know what cause it either, and I'm not sure they know what the effects of it are, and I'm not sure they know what to do about it yet.

There is research and development going on obviously at EPA, Agriculture, private industry, a high level of attention in our country and in our neighbor to the north, Canada. I don't have the answer, but those are my impressions of what I've read so far on it.

Senator **Ford**. Mr. Herrington, I asked for a GAO report to summarize all the basic reports as they related to acid rain. That statement was not in favor or against; it just reported the facts based on the research that was available. And they came to the basic conclusion that there's a problem. Nobody has developed a concrete study on what causes it, how far it travels, all the various and sundry things. And I hope you take an opportunity to visit that document at some point and just see how it lends itself basically to I think what you just said in answer to my first question.

Mr. **Herrington**. Is this the recent GAO report?

Senator **Ford**. Yes. What, about 3 or 4 months ago, something like that.

Mr. **Herrington**. I would like to read it.

Senator **Ford**. I am informed it came out the early part of December. I thought it was a little before that, but the early part of December.

Do you think this controversy, referring to acid rain, has implications for the rate at which we can move to a position of less energy dependence?

Mr. **Herrington**. It would depend on how you evaluate the problem of acid rain and what conclusions you draw on fixing the problem. If you end up coming down with the position that acid rain is totally caused by the burning of coal and then move to restrict the burning of coal totally, obviously it has a major impression on the rate of growth of energy independence, because coal is a large part of our energy base. So I think the answer, the simple answer is "Yes."

Senator **Ford**. Would a demonstration of clean burning coal technology have a beneficial effect on the acid rain situation?

Mr. **Herrington**. Yes.

Senator **Ford**. I like those kinds of answers.

If so, how can we best ensure that this demonstration takes place sooner rather than later, in your view, then.

Mr. **Herrington**. I do not have an opinion on that. It would depend on the participation private industry is putting into it and how the government and scientific communities are addressing the problem, but I have no total answer for this

Senator **Ford**. Mr. Chairman, I have several other questions, and I will just submit those for the record. They get into uranium enrichment and basically answers to the DOE-DOI merger that we talked about earlier.

I thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Ford.

Senator Nickles.

Senator NICKLES. Thank you, Mr. Chairman.

Mr. Herrington, I know that several of the Senators have asked you about the possible reorganization. I might just ask kind of a related question. Many have stated their opposition to that. I don't share that opposition. I would like to see a review.

You stated that you were going to review the Department and see if it might be able to better function in some other capacity than at a departmental level?

Mr. HERRINGTON. I do not think that is a correct interpretation of my statement, but I want to be clear on it. I did not say I was against merger. I said I was totally open-minded on the question, and I related to the committee the guidance that I had had from the President to look at it and give my best opinion on what his options are for the future handling of the Department.

Senator NICKLES. The Department was created when?

Mr. HERRINGTON. 1977.

Senator NICKLES. 1977? How many employees are in the Department today?

Mr. HERRINGTON. Approximately 16,000, I would estimate.

Senator NICKLES. 16,000? I was looking at an organizational chart of the Department. I wonder if you might supply myself and members of the committee a breakdown of the numbers of employees as they break down organizationally.

Mr. HERRINGTON. Yes, Senator, I would.

Senator NICKLES. And financially as well.

Senator McClure had part of the breakdown for some of us for so many billions of dollars in this area. If you could give us maybe kind of a—it may be all in the budget, but——

Mr. HERRINGTON. You mean what money is spent in which different departments of the energy——

Senator NICKLES. Particularly in the regulatory areas is what I am looking for.

Mr. HERRINGTON. OK. Yes. This is something that we will be putting together anyway, regardless.

[The information follows:]

07-Feb-85 ORGANIZATION EMPLOYMENT AND BUDGET ALLOWANCE

ORGANIZATION	EMPLOYMENT ONBOARD 1/19/85	FY 1985 ALLOWANCE ($ 000)
HEADQUARTERS		
Office of the Secretary	37	1,630
Management & Administration	1098	21,423 *
General Counsel	227	10,006
Inspector General	185	21,708
Congressional, Intergovt'l & Public Affairs	93	4,168
Hearings & Appeals	84	5,242
Internat'l Affairs & Energy Emergencies	141	10,924
Policy, Safety & Environment	169	45,094
Board of Contract Appeals	9	378
Minority Economic Impact	10	2,408
Civilian Radioactive Waste	100	353,756
Conservation & Renewable Energy	347	702,151
Energy Research	279	1,821,605
Defense Programs	442	6,775,901
Nuclear Energy	307	1,187,541
Fossil Energy	221	2,483,270
Economic Regulatory Administration	283	21,999
Energy Information Administration	496	60,424
Federal Energy Regulatory Commission	1614	54,343
Payments to States	0	570
Undistributed	0	(60,000)
Subtotal	6142	13,524,541
OPERATIONS OFFICES	4103	147,251
POWER ADMINISTRATIONS	5172	660,645
SPECIAL PROJECT OFFICES	386	**
ENERGY TECHNOLOGY CENTERS	575	**
DOE TOTAL	16378	$14,332,437

* Is net of miscellaneous revenues estimated at $219 million.

** The Technical Information management program funding of $13.4M is included in Management and Administration Funding for Naval Reactors is included in Nuclear Energy amount shown above. Funding for Naval Petroleum Reserves and Energy Technology Centers is included in Fossil Energy amount shown above.

Senator NICKLES. I am reminded of a saying that Will Rogers once said. He said all government agencies have something in common: they all have a beginning, they all have a muddle, and they all have no ending. I would like to see that changed.

I share with Senator Ford some of the comments he made as far as coal, and particularly the transportation of coal, and I will work with you, Senator Ford in trying to make some changes in the Staggers Act.

But in my State, just for example, when we are importing coal, transportation costs are many times two and three times what the cost of the coal is itself, and that poses a problem. But I was a little bit concerned about, or maybe a further concern is on some legislation that I think still remains to be done. That pertains in the area of natural gas.

Some progress has been made. Senator McClure alluded to the fact that many categories of natural gas are now deregulated. The prices have fallen. That is good. We still have though, as I am sure you are aware, we still have several categories that are perpetually regulated for the life of a field.

I personally would like for you to look at, and we worked with your predecessor, Secretary Hodel, on legislation for the deregulation of natural gas. There was a lot of discussion about whether we should abrogate contracts. I do not think we should abrogate contracts, but I would like your assurance that you would work with this committee for the total regulation of natural gas.

Mr. HERRINGTON. It is something that I assure you that I will be aware of and work actively in. I will be particularly interested in what the effect of the January deregulation this year has, whether we do have in fact price flyups or what radical changes to the market take place. I think that needs to be evaluated, and I would look forward to working with you and the other members of the committee on that.

Senator NICKLES. I can just tell you, from a producing state, that you haven't seen the flyup, and you won't see the flyup. The deregulated categories of gas have been falling. The regulated categories of gas continue to rise, but the thrust of what I am requesting you to look at is at least for those contracts that continue under the price control mechanism, that when those contracts do expire, that they be allowed to be renegotiated at market price, or in the event that both parties get together and renegotiate a contract, they would be able to do that at whatever price is agreeable to them and not mandated by the Government.

On the third line of that, and again I'd like you to look at it, that is also important, is this prevention that is now in the present statute called the Fuel Use Act, which says you can't burn natural gas. Again, I want to be able to burn coal, and we find it is economical in Oklahoma to burn coal versus gas. So I am not against that, but I am against the Federal Government and DOE or the politicians mandating that you can't burn natural gas. I think it should be the marketplace.

Do you agree the marketplace should be the determinant factor on which fuel we burn instead of regulation?

Mr. HERRINGTON. In that particular case you just cited I would tend to agree with you.

Senator NICKLES. I would hope so.

One other thing, and again, this goes back to some of Senator Ford's comments. We wrestled with the issue that was defeated, for whatever reason, on coal slurry. Many of us feel like we need some competition for transportation of coal besides the railroads. Do you have an opinion on whether or not we should move forward on coal slurry pipelines?

Mr. HERRINGTON. To be honest with you, Senator, I do not. I understand some of the problems in coal slurry pipelines, but I don't think that I have been persuaded of any particular opinion at this time. I know the water problems and the eminent domain problems.

Senator NICKLES. That is not the most imminent problems, but I think it is something that still is involved. We need some competition in some areas where transportation costs are two or three times the costs of the product. Coal slurry is one possibility.

More immediate and of major concern to this Senator is the implications of energy policy on the so-called Treasury tax proposal that has been floating around for some time now. Would you—and I know Secretary Hodel has started this to some extent—would you and the Department of Energy try to assess the impact on the energy industry production, et cetera, of those proposals on this country?

Mr. HERRINGTON. I think that is our obligation as the Department of Energy. It certainly is a responsible action to assess what impact that type of simplification would have on the industry.

Senator NICKLES. You will do that for us?

Mr. HERRINGTON. Yes, sir.

Senator NICKLES. I think time is of the essence. As you know, there is a lot of push working. Could you give us an idea of the timetable?

Mr. HERRINGTON. I cannot.

Senator NICKLES. Will you work on it as quickly as possible?

Mr. HERRINGTON. I will work on it in an expeditious manner to come forward at least simultaneously with tax simplification or before, if we can do it.

Senator NICKLES. I appreciate that.

Are you aware of the fact that right now we are spending, this country is spending something along the line of $50 billion to $60 billion a year for oil imports?

Mr. HERRINGTON. Yes, sir.

Senator NICKLES. Are you aware also, and maybe concerned about the fact, that that percentage is likely to increase because we have seen a decline in domestic drilling from 2 years ago of approximately 4,500 rigs to today a little less than 2,400?

Mr. HERRINGTON. I have seen those figures, Senator, yes.

Senator NICKLES. Does that concern you?

Mr. HERRINGTON. Yes, sir.

Senator NICKLES. It concerns me as well. And again, not just because I am from a producing State, although I will admit that that has some input, but also from the fact of energy security and the fact that everybody deplores the fact that we're spending $130 billion negative balance of trade, and almost half of that is oil. And if we can see a continued reduction in domestic production, you are going to see that figure increased, and increased dramatically, it could over a period of years.

Then the desire may be to turn the valve back on domestically. But if we proceed, at least in this Senator's opinion, with something close to the Treasury proposal, you are going to see a much greater reduction in domestic production, and that could be, I think, catastrophic to the country and energy security as well.

I will mention that we are planning on having a hearing which I hope, as I understand Mr. Boggs, the Deputy Secretary, will participate in in Oklahoma on February 15, to consider the energy implications of that proposal, and I would appreciate your review of the transcript of that testimony as well.

Mr. HERRINGTON. Senator, I will, I assure you.

Senator NICKLES. Thank you very much.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Nickles, thank you.

Senator Matsunaga.

Senator MATSUNAGA. Thank you, Mr. Chairman.

I wish to join my colleagues in congratulating you, Mr. Herrington, upon your nomination.

Mr. HERRINGTON. Thank you.

Senator MATSUNAGA. You quoted a figure of 16,000 employees presently within the Department of Energy.

Mr. HERRINGTON. That is an estimate, Senator. I think it is pretty close, but I would like some latitude on it if it were a factor in being exact on it.

Senator MATSUNAGA. How many of these were newly employed, do you know, when the Department of Energy was created as a separate Department?

Mr. HERRINGTON. Sir, I do not have an opinion on that. The Department was created as a compilation of many different departments, and I would expect that you saw continued activities of the AEC and some of the other functions moved into the Department.

Senator MATSUNAGA. So that in fact when the Department was created as a separate department, actually a coalition of other existing agencies were molded into one. So in fact, really, the impression given perhaps that 16,000 were newly employed is not correct.

Mr. HERRINGTON. I would agree with that.

Senator MATSUNAGA. Mr. Herrington, the ability of market forces unfettered by Government restraints to meet the nation's immediate and future energy requirements appears to be the key tenet of the present administration's policy on energy.

As a practical matter, however, people across the political spectrum are concerned about what course the administration would take to alleviate social hardship in the event of an oil supply disruption or cutoff, especially in light of its proposal to cut back on filling the strategic petroleum reserve. The American Petroleum Institute has warned against complacency in this regard, and at least one major oil company has lobbied State legislators to pass State set-aside legislation as a "social safety valve," given the hands-off approach at the Federal level.

In a broader sense of encouraging energy efficiency, manufacturers in the private sector have advised lawmakers that market forces fail to stimulate energy efficiency when those who bear front end costs such as real estate developers and homebuilders have no reason to be concerned with life cycle costs such as those paid by apartment dwellers, commercial tenants, or occupants and homeowners.

Efficiency standards for air conditioning equipment is a case in point.

Now, what do you believe to be the role of the Federal Government in the case of efficiency standards and during an energy emergency, and what do you believe to be the role of State and local government vis-a-vis your Department during such period?

Mr. **Herrington**. The role, No. 1, is close cooperation between the Federal, State and local officials. I do not think any one particular branch of the Government can do the job totally. The further role I think is to encourage the types of conservation measures that you have mentioned. You talked about builders of apartments, homes, having no incentive to install weatherization or economy cycles on air-conditioners. There also, if you recall back a few years, was no incentive in the economy for restoration of historic buildings. It was not being done. But the Congress in its wisdom—I do not know the costs—you have to weigh the cost over what you got—decided there would be a credit, a faster writeoff for redevelopment of existing projects, and what you see existing, springing up all over this country are some wonderful restoration projects. You have one in downtown Honolulu, the old Royal Palace.

But Government's role can encourage front-end costs; encourage people to make the necessary decisions, business decisions to give you what you want.

On the final part of your question, I do not have an opinion on what the exact role of government in an emergency situation is. I do feel very strongly that people who need to have heating oil at a time of a big winter need to have it. I, like the rest of the members on this commission, do not want to see people freeze in time of an emergency.

What is the best mechanism to carry that out? I do not have an opinion on that, but it is something that this Congress and Energy Department ought to be looking at because you do not wait until an emergency like that happens until you take action. So I am interested in that particular program.

Senator **Matsunaga**. So you would agree with me that the Federal Government ought to provide incentives toward energy conservation, for one thing, because as I am sure you are aware, energy conservation has been one of the principal means by which we have been able to reduce our consumption of energy. And I am sure you are aware also that by providing tax credit for the development of alternative energy, we have in fact enjoyed $9 in new revenues for every $1 of tax credit given, and I strongly believe—in our private conversation I think you agreed with me—that this is the type of activity that should be continued.

And yet we have a proposal before the Congress which would eliminate these incentives, calling for the elimination of the energy tax credit.

Mr. **Herrington**. The incentives, in my opinion, work. I have used them. We did in fact insulate our attic, and we did take steps.

Other Americans did the same thing, and I find nothing objectionable about using tax incentives to direct a national policy.

So I think it is a balancing. It is how much, Senator, and where you want it to go, and these decisions are decisions that all of us must make, but most especially the Congress.

Senator MATSUNAGA. And in light of the position of appliance makers that State-imposed efficiency standards represent an impractical burden on interstate commerce, are you prepared to reexamine the DOE's "no standards" standard posture toward the National Energy Conservation and Policy Act of 1978?

Mr. HERRINGTON. I do not know that I have an opinion on that. I can see benefits on both sides. I understand the reasons for some sort of a national policy, but then it strikes me that an air-conditioning unit in Hawaii is not the same thing as an air-conditioning unit in Alaska. And for instance, a toaster in one State may not work in another State. There are regional problems here that I do not feel competent to give an opinion on that I would like to examine before I give you a hard and fast answer.

Senator MATSUNAGA. Fine. We will bring this matter up sometime after you have a chance to study it.

Mr. HERRINGTON. Thank you, Senator.

Senator MATSUNAGA. I have no further questions at this point.

The CHAIRMAN. Thank you very much.

Senator Domenici.

Senator DOMENICI. Thank you, Mr. Chairman.

Mr. Herrington, I am fully aware that when you become Secretary you have very broad responsibility, including a great deal of international responsibility with reference to energy and the like.

I obviously have a rather parochial interest in a number of issues, and I regret if most of my questions will be aimed in those particular areas, but that is my only way of getting across some points to you and asking your opinions.

But before I do that, on the question of renewable tax incentives, in particular, solar, let me suggest that we have a very serious policy dilemma when we are doing a tax bill and it involves something like the extension of the solar tax credit, without which most people say the solar industry in the United States will wither and die, and it is not competitive right up front because we have so many regulated energies—obviously natural gas is regulated—and you have got to bring on a new one, and its competitive position is advantaged. But the problem I have found—I do not know if the distinguished Chairman has found it, or Senator Matsunaga was terribly interested in renewables—is that we only get the Department of Treasury's views on energy tax credits when the tax bills come.

I would suggest that since your responsibility is in the field of energy, that you do whatever you can to try to share in that policy determination, at least to the extent of advising some of us on the energy aspects. I found the last time we worked on it that it was all Treasury and no broad policy, and the Department of Energy was not to be heard from. I do not know who says what your role is, but I right up front here would encourage and urge that you and your good people at least have some significant input with reference to those kinds of tax matters so that we have something to buttress the general policies of the Treasury.

Do you have any observations or thought about that?

Mr. **Herrington**. Well, I have sat in meetings where various tax policies were discussed at the White House, and the arguments of Treasury and OMB are all dollars and cents arguments, and I tell you that I am sure you will appreciate this in the sensitive job you are in today with the deficit problems, there are more than just dollars and cents in some of these issues. I recognize that and I would be a strong energy advocate in those councils on how the policy will influence various sectors.

Senator **Domenici**. I thank you for that.

Now with reference to the Department and its continuation and your study and recommendation to the President, I do not want to say much about it excepting that I think you will, as you have said here in an honest way, give some recommendation to the President. I would hope you would do that quickly.

Do you plan to do that quickly?

Mr. **Herrington**. I want to address it right away, but you must do it in a manner that has some weight.

Senator **Domenici**. I understand.

Mr. **Herrington**. So I do not intend going after this, like any other project, in a half-hearted way. It needs to be done well.

Senator **Domenici**. My concern is that clearly I am opposed to it, it should not be terribly relevant other than the fact that you have said you feel that we share in that responsibility and that you must find out what we think in order to evaluate the prospects of any option you have. And it is only in that context that I tell you I am never against streamlining, saving money and the like, but I think that with the issues that confront this Congress and this President, to busy ourselves with this exercise at this point is—borders on the ridiculous, not to study but to really be serious about this kind of thing.

We have deficits, budgets, tax reform, Geneva, all kinds of things, and I am just hopeful that as expeditiously as possible we get this out of the way one way or the other. That is the only reason I expressed that.

Before I get to my parochial issues, I would like to make one other comment. You have heard about acid rain here today. This is nothing more than an observation. I happen to be on the Environment and Public Works Committee and have been there 12 years. I have heard a very good suggestion of late with reference to some further evaluating of acid rain cure. It, strangely enough, is tied to the Fuel Use Act on natural gas. As you might know, while we have deregulated in some areas, we still have some very strong restrictions on the use of natural gas for new electric generating plants, and some very strong ones on using it in old ones that are burning coal.

I would urge that you put some people on this issue to study the possible impact, beneficial impact, of removing the Fuel Use Act restrictions so that there could be a mix of coal and natural gas in some of the States that are having a very difficult time with a policy that seems to be headed in only one direction, to wit, billions of dollars worth of scrubbers, and no other option.

It appears to me that there is some natural relevancy to a mix, and I would hope you would look at that to see if, as we move through it environmentally, if the Department of Energy has any ideas about it.

Mr. **Herrington**. I will, Senator.

Senator **Domenici**. Now with reference to matters more parochial to me, Senator Warner addressed the issue of the blue ribbon commission that will be studying the present jurisdiction of the Department of Energy over nuclear weapons. There was some indication, Mr. Herrington, that that study was necessary because the National Labs and others who are controlled by your department with reference to nuclear weapons might just be engaged in some kind of an almost frolic. Some of them think they just go out and build nuclear warheads because they decide to, and they don't have a tough budget.

I might remind you that that can't be the case unless—and you used the word so I will use it—unless the Commander in Chief has so indicated, because this warrants the right use of the word Commander in Chief, because before they build one, he establishes the number. And before the number is funded, it comes to Congress. So it appears to me that there may be some other looseness involved.

But it is rather strange to say that they are out there building on their own. This is one where literally the President of the United States fixes the numbers. So I just wanted to call that to your attention and ask you if you are aware of the historic reasons why the nuclear weapons production and research of this country is not vested in the Department of Defense.

Mr. **Herrington**. Some of them. I am sure that I don't know as much as you do or all of the reasons, but the historic decision was to leave that activity under civilian control.

Senator **Domenici**. Yes.

Mr. **Herrington**. I think is a bona fide objective, and I think keeping—there are good reasons to keep the scientific community out of or divorced from the Pentagon activities. I think it provides an atmosphere for a more pure research environment.

I am sure there are other reasons, but as I recall reading my history book, that was essentially the old AEC post-World War II rationale.

Senator **Domenici**. You have hit it right on the head. It started with Truman, and that is how it got where it is after having been somewhere else for a long time, but never in the Department of Defense.

Now with reference to the National Labs, let me give you another observation. It appears to me that the National Labs, some of which are in my State, some of which are in Senator McClure's State, Illinois and elsewhere, are one of the reasons the United States is held in such high esteem by the Soviet Union, and that has to do with our abilities in science, research and applied technology that is always on the cutting edge. I think that is more frightening than anything else to those who want to compete. The labs are terribly important.

I would ask you, well, I know that these labs need to be integrated in the process and policies. Do you not see some merit to their not being run directly from Washington with almost daily Washington supervision?

Could I have your feelings about that?

Mr. HERRINGTON. You would have to extend the question a little bit. I did not understand whether the thrust is: "do I feel they are not being run from Washington or"——

Senator DOMENICI. I think they have of late felt that they are suffering from a lack of attention and direction on the one hand, but on the other hand, in some areas, some rather meticulous and detailed involvement, and I would just like to know how you see their role with your department.

Mr. HERRINGTON. Well, in a general manner, I viewed—and I have some background in this. We lived next door to Livermore in California. We socialized with people from Livermore. I think our national labs are probably one of our greatest national treasures, and as Secretary of Energy, provided I were confirmed, I would do nothing that would upset that relationship or that asset.

As you stated so well a minute ago, the technological edge of this country is developed by our scientists, and if we are ever to be productive in this world and have spillover into industry of the new functions, this is the cradle where it will happen. So that is the only general statement I can make on it.

But you will find no bigger advocate of national labs than myself, next to you, Senator. [General laughter.]

Senator DOMENICI. You are more important than I.

Senator JOHNSTON. Let Senator Ford, let's endorse him now and get it over with.

Senator DOMENICI. You said if you get confirmed. I prefer, after the statement you just made, to say when you are confirmed. You will be.

Let me just take two other quick ones, and then I want to ask you about the waste isolation pilot project for transuranic wastes.

You know the Department of Energy with reference to a number of health and safety considerations, not all of them, but with reference to many, they are self-regulators. In some areas NRC helps; in other areas, they are subject to EPA, but in many of the very broad areas of safety and health, you regulate yourself.

DOE has always had an Assistant Secretary for Safety and Environment. I would urge, Mr. Herrington, that you take a real look in light of contentions that are brewing out in the countryside about the self-regulation, that you seriously consider going back to where it was for years and having an assistant secretary to have direct input to you on the matters of health and safety, and at the bare minimum, that you establish some process to make sure you are aware of what is going on in the health and safety regulations. They are very complicated, and they are constantly being updated.

Could I just have some observation or thought from you?

Mr. HERRINGTON. Sir, I am not aware of that historic position, but I think it is a good idea, and I would look at that very carefully if I am confirmed.

Senator DOMENICI. On the same vein of some input to you, I have heard you talk here today about our overdependence on foreign oil, and that worried you and that still worries you that we would import so much, and that it is dangerous to our country to be overly dependent on anything as important as oil.

I would think you would be concerned if we move in the direction of overdependence on electricity or overdependence on any of those things. So that brings me to one that disturbs me greatly, and that is an overdependence on foreign produced uranium. I will acknowledge that I am a strong advocate of nuclear energy, contrary to my opponent from Arkansas who thought it was something we ought to get rid of as per Forbes magazine. I think that is about as bad for the country as anything. I think one energy decision that will be blamed for about three decades out is the demise of nuclear energy.

Having said that, the uranium industry is about gone. They used to have 22,000 workers, 365 mines. I think we now have 15, Mr. Chairman, in the whole country, and 4,000 workers in the whole industry. While your Department, not under you but under your predecessor, was saying it is viable, under a statute that would put you in some position of helping, within 72 hours of that announcement, the major producer of uranium closed in my State and in two others, and I urge you to put back in place a staff position that can clearly monitor this industry. I think it is just a budding disaster to have none left when we really need it, and I hope you will consider monitoring it more closely so that these statutory responsibilities can be appropriately addressed.

Mr. HERRINGTON. Senator, I would intend to monitor very closely that situation that you just mentioned, but in addition, I would also like to have input from the people that work in that industry as to what best we can do to help them. Nobody certainly in this room, and not myself, wants to see a strategic industry in this country on its knees, and we have worldwide competitive situations not only in uranium, but in steel and textiles, and the country is on, in my estimation, a crossroads where we need to examine industrial competitiveness in this country. And I will look for heavy input not only from you, Senator, but from members of the industry.

Senator DOMENICI. Mr. Herrington, you will find this one is on its knees if not beyond. It may very well be already flopped over, off its knees, on its back. But I appreciate your concern.

My last question has to do with a very important project for this country. I asked you about it in my office, and I do not want to be technical if you have not had a chance to look at the waste isolation pilot project statutory language.

Have you had a chance to look at it?

Mr. HERRINGTON. Yes, sir, I have. I did review the legislation and also the communication between Secretary Hodel and the Governor of your State.

Senator DOMENICI. I have been an advocate of that project, contrary to political trends, for a long time, and we are about to build the first American permanent depository for transuranic, low level waste. It is well on its way.

What I would like to be able to do, based on the statute, the history, the current findings by your Department, to have you as the next Secretary of Energy answer once again for New Mexicans that you intend to follow the law and the stipulations that were entered into between my State and the national Government, and that they can be told that you have no intention of pursuing the placement of high level wastes in the waste isolation pilot project in Carlsbad, NM.

Mr. **Herrington**. Senator, I have read the documents you have referred to, and I can give you that assurance that I would concur in the opinion of Secretary Hodel that that project is not a high level waste project, and that we will not go back on the assurances that have been given, both in the stipulations and the correspondence between the Secretary and the Governor of New Mexico.

Senator **Domenici**. I thank the Chair. Thank you.

The **Chairman**. Thank you, Senator Domenici.

Senator Bumpers.

Senator **Bumpers**. Mr. Herrington, I want to get one question out of the way right now that in the past I do not think Congress is terribly interested in it, but I am, and it deals with the screening of persons selected to scientific advisory boards, scientific research advisory boards. I do not think the Republic is going to stand or fall on this issue, but I think it is a little tip of the iceberg that disturbs me. That is, perhaps as you know, a couple of years ago I discovered that Secretary Watt was running the names of people, who were supposed to be selected because of their scientific expertise, by the Republican National Committee for clearance, and the document that came into my hands showed quite obviously that the RNC was reviewing them. I am not pointing an accusing finger at the Republican National Committee. I am quite sure the Democrats have done it in the past when they had the opportunity, but I think it is a had practice regardless of who does it. People who are picked for scientific advice. It seems to me, is a very bad policy for this country to demand some kind of ideological litmus test as well.

How do you feel about that?

Mr. **Herrington**. I would agree. I was aware of that situation because I read it in the newspaper 2 years ago when you brought it up. This was not a policy of this administration to check the political litmus of any scientist, and I have to tell you, in 2½ years of trying to fill Government jobs in this administration—and I am sure my predecessor in the Carter administration faced the same thing—the hardest thing we have to do is attract a technical person into this Government to earn $50,000 or $60,000 a year. They have family considerations, they have salary considerations, and if you find one who is willing to come in and work at NASA or at the labs or at the Pentagon in the scientific jobs or NIH, you are lucky to get them. After that, what party they belong to usually is irrelevant.

Senator **Bumpers**. Well, could you tell me that in the appointment of persons you are going to select—and incidentally, I agree with the President on the fact that we have entirely too many advisory board members, too many advisory commissions and boards in this country. I saw the other day where he was recommending the abolition of a lot of them. I did that when I was Governor of my State, and I think he is on the right track. But obviously some of these people serve a very useful purpose. They meet here maybe once a month, once a quarter to give advice to you or other members of your Department.

Incidentally, do you know offhand how many advisory committees and boards there are within the Energy Department?

Mr. HERRINGTON. I don't within the Energy Department. I think I have a pretty good handle on it within the Government.

Senator BUMPERS. What is it within the Government?

Mr. HERRINGTON. We have roughly 10,000 appointments. Any President that is elected has Presidential Advisory Boards, and has departmental advisory boards. I think Energy is fairly small, but there are a lot of them in Interior, Defense, and the State Department, which has a lot of delegations. I mean, it is a huge network. When I first got in the personnel job, we wanted to get rid of some of them. The budget for, I guess, all of them together was about $75 million. Some people said, well, that is not a big cost to take care of political supporters. It is still something we ought to look at.

So I picked out a board I thought would be the easiest to get rid of, and I identified this little board called the Metric Commission. All they had to do was advise the President on the use of the metric system in the United States. We took a run at that one. Well, they came out of the woodwork on that one. So——

Senator BUMPERS. They all have their own leaders here in Congress.

Mr. HERRINGTON. And I went down the list, and I said, what is one that really we could get at? It was a toss-up between the South Atlantic Blue Fin Tuna Commission and the Marine Mammal Commission. Now, coming from the west coast, I should know better on marine mammals, but we targeted both of those, and frankly, we were almost lynched. [General laughter.]

I have to tell you, it is a very difficult job.

Senator BUMPERS. What you are telling me is you are a quick learner.

Mr. HERRINGTON. It is a tough job to move entrenched interests out. We have gotten rid of some that have just naturally expired because the laws expired and we have not renewed them, and there has been good work done in that area. But I have to tell you there is a lot more to do.

Senator BUMPERS. Senator Matsunaga told us, he says we have a tea tasting commission.

Senator MATSUNAGA. Did we get rid of it?

Mr. HERRINGTON. A Presidential tea tasting commission?

Senator MATSUNAGA. To taste tea.

Mr. HERRINGTON. Senator, I am not aware of that one.

Senator MATSUNAGA. Did they get rid of that? This was about 10 years ago.

Mr. HERRINGTON. Some have gone.

Senator BUMPERS. Mr. Herrington, one of the things that caused me concern on this was the fact that in the Soviet Union they still suffer to this day as a result of a policy called Lysenkoism. That is a policy of a scientific advisor to Joe Stalin, who was dead wrong about a lot of scientific policies, but those who disagreed with him were almost summarily executed. As I say, they got rid of some of the best minds in the Soviet Union. So it is one of the reasons they were in poor shape to fight World War II, because they had executed a lot of the very best scientists.

Now, we are not to that stage in this country, but you know what my concern is, and I want to know if you share it.

Mr. HERRINGTON. I share your concern strongly, Senator, and I do not agree with the policy of political tests for technical type scientific people. But in the function of the job I have just come from, or I am still in, it was a political job, and we did look at political consideration for schedule C positions in the Government and for Presidential appointments, as any President does.

Senator BUMPERS. If you have two people and they are equal in their credentials and so on and one was a rabid Mondale supporter and one was a rabid Reagan supporter, I understand that, and I am not squawking about any part of the Government except in the scientific part.

Mr. HERRINGTON. I am totally in agreement with you on the concerns, and we share them.

Senator BUMPERS. Mr. Herrington, let me take a different line of questioning.

Are you familiar with the Public Utility Holding Company Act of 1935? Have you had occasion to discuss it with anybody?

Mr. HERRINGTON. No, sir, I have not.

Senator BUMPERS. Let me ask you this. Do you consider yourself a fairly firm and devoted proponent of States' rights?

Mr. HERRINGTON. I thought I was. I've been forced to make some decisions, or hold some opinions lately where I'm beginning to wonder, but I like the principle. [General laughter.]

Senator BUMPERS. You are not willing to come down hard on it right now? [General laughter.]

Mr. HERRINGTON. I think as a general proposition, my leanings are toward States' rights and toward less Federal intervention. As a general proposition, it is a good rule to follow from where I am coming from.

Senator BUMPERS. Would you also agree with me that one of the most troubling problems in the country right now for the middle and lower middle income people in this country is the payment of the utility bills?

Mr. HERRINGTON. Yes, sir.

Senator BUMPERS. It is a sort of a curious thing, is it not, that oil prices have been declining, natural gas prices have been declining, and yet utility bills continue to escalate. Many people are finding themselves in the position of a catch-22 situation where if they use it they have to pay for it, and if they do not use it they have to pay for it because of these monumental costs of some plants, particularly of nuclear plants.

But let me ask you this. Do you think that a State public service commission as a rule ought to set the rates for gas and electricity within those States?

Mr. HERRINGTON. It would depend on the distribution grid that they were dealing with. I do not have the specific facts of the case you are raising, but if it crossed over into other States, used part of the Federal system, I would want to know that.

Senator BUMPERS. You are familiar with the law that says any time energy is sold, electricity is sold across State lines, that the Federal Energy Regulatory Commission then has exclusive control over the rates.

Are you familiar with that?

Mr. **Herrington**. Yes, sir; I undertand that proposition. I think that is about as far as my knowledge goes. I do know the scope of their authority.

Senator **Bumpers**. Let me ask you this. Do you think it is fair, do you think it is right, or does this abuse your sensibilities in any way for a public utility holding company to build powerplants and mandate that the power from that be taken by a subsidiary or subsidiaries in adjoining States and tell them they must take the power from this plant whether they need it or not? Does that sound high-handed to you?

Mr. **Herrington**. On the face of it, it does not sound good. I would need to know more about the facts and the applicable law before I gave you a hard and fast answer. But on the way you state it, it sounds like a situation that has some inequity.

Senator **Bumpers**. Would you be willing to support legislation to allow the State, if required to take such power because of Federal exclusive jurisdiction over the sale of interstate electricity, the right to determine what they would charge their ratepayers for it?

Mr. **Herrington**. I would rather not guess about the answer to that. What I would like to do is to advise myself fully on the facts of that situation, and I would be willing to give you a hard and fast answer. But I feel a little uneducated as to the facts or the issue to speak out on that.

Senator **Bumpers**. Do you think utility companies should be held to the same standards that any other corporation is held to, that is, if management miscalculates, makes a mistake, do you think that the stockholders of a utility company, just like stockholders of any other company, should be the losers in that case? If you invest in IBM and IBM loses money and you do not get a dividend, that is a risk you took when you bought the stock, is it not?

Mr. **Herrington**. Yes, it is.

Senator **Bumpers**. If you bought stock in Long Island Lighting, and they have made some management mistakes and they lose money, you do not get a dividend, that is also your risk when you bought the stock, is it not?

Mr. **Herrington**. I would draw a distinction in my own mind. I think as a general rule that is correct, but I see public utilities dealing in two areas that private industry does not deal in: First, high risk undertakings with heavy capital obligations. They go to places where private corporations do not necessarily want to go.

Second, in many cases they are monopolies. They are not under the competitive influence that private corporations are. I am not sure that I would totally agree when you put them in the same basket.

Senator **Bumpers**. But on the other hand, isn't it attractive to stockholders to invest in utility companies when it has been shown in the past that they are almost always guaranteed a profit? They are not unconstrained? In other words, IBM stock might double in a year because of tripling of profits. Utility companies are not normally allowed to make those kinds of profits, but by the same token, on the other side of that coin, they always have the ratepayers to lean on, the public service commissions normally guarantee them a return on their investment.

Isn't that also a very attractive incentive for buying stocks in utility companies and holding companies?

Mr. **Herrington**. It used to be. It used to be, but I am concerned about some of the people that lost some money innocently in this Washington Power case. So I don't think you can make a hard and fast rule. I think this is a very difficult balancing act that we are going to have to address on the securities investments.

Senator **Bumpers**. Mr. Herrington, let me give you a scenario and ask you for a response.

Mr. **Herrington**. Yes, sir.

Senator **Bumpers**. Middle South Utility Companies owns Arkansas Power & Light, Louisiana Power & Light, Mississippi Power & Light, and New Orleans Public Service. That is four utility companies. They made a decision—that is, Mississippi Power & Light made a decision to build a nuclear generating plant, Grand Gulf. It became apparent after a 17-minute hearing, incidentally, when Mississippi Power & Light was given the authority to build the plant, it became apparent shortly thereafter that they couldn't afford it.

Now despite the fact that the Public Utility Holding Company Act of 1935 absolutely prohibits a holding company from building generating capacity, Middle South formed a subsidiary called Middle South Energy, just to circumvent the Public Utility Holding Company Act, and they proceeded to build the plant because that put Middle South's whole operation behind the financing of it.

At this point, Louisiana and Arkansas and New Orleans were never consulted. The powerplant was started, and it was built. It was built because they calculated they were going to need the power. As it turned out, they didn't. So that was the big management mistake.

Now they say to us, we had no control over the building of that plant. Nobody asked us whether we wanted the power or whether we didn't; it was being built primarily for Mississippi's use and the cost overruns are in the magnitude of 500 to 700 percent.

Now, you know, I wish I had a business where if I made those kinds of mistakes I could just go to the Federal Energy Regulatory Commission and say, just pass this on to the respective States and make the public service commissions down there set rates so we can get this plant paid for.

Now my simple question to you is this: In a situation like that, simply because the law apparently allowed them to circumvent it and build this plant, do you think they should have the authority to turn right around and pass that cost on to us when we couldn't use a kilowatt of that power if our life depended on it? And I speak for other States. I'm just telling you about Arkansas, but I speak for other States also. Completely aside from the legal implications, does that sound fair to you?

Mr. **Herrington**. There is nothing simple about that case.

Senator **Bumpers**. Are you familiar with that case?

Mr. **Herrington**. No; I'm not. But just from what you've described to me with the conflict of laws between the States and the jurisdictions and the various boards making those decisions and now the commissions having to make a decision on their rates, to me that is a very, very complicated fact situation. It looks like a no-win situation since, as you put it, it's at a very difficult point now.

I don't even know if the *Grand Gulf* case, as you say, is in the courts of law or not. I am a cautious person, having practiced law for 20 years. I would like to spend a lot of time doing some reading and looking at that before I comment on it.

Senator **BUMPERS**. Let me tell you something you won't find when you're reading. Middle South made a half billion dollars last year. In light of that, do you think it would be fair to ask their stockholders to eat a good part of this plant?

Mr. **HERRINGTON**. It doesn't sound like it, from what you say, but I don't know what other factors are involved in it.

Senator **BUMPERS**. Well, I'm reluctant—I'm not grilling you on that.

Mr. **HERRINGTON**. No, I understand.

Senator **BUMPERS**. I am just making you aware of what I think is a gigantic void in the law that would allow anything like that to happen. Obviously I am going to ask you at some point to support legislation completely—you know, I would hope that it might deal with this case—but by the same token, I certainly want to make sure it doesn't happen again, to us or anybody else who happens to be victimized in such a way as that.

Mr. **HERRINGTON**. When you are dealing with these massive amounts of money that are going into energy, you don't always get these predictable results. I don't know if Grand Gulf was predictable or not. I don't know from the scenario you have given me today, whether you could have seen it when the investment decision was made. The same with the *WPPSS* case. I am sure nobody ever figured into the sunk costs what it would take to clean up Three Mile Island.

Senator **BUMPERS**. I know I'm preaching to the saved when I'm talking to people like the chairman and other Senators who were involved in the *WPPSS* case, but my position is very simple on this.

The people of my State, this plant was built without so much as a by-your-leave from either Arkansas Power & Light or the people of Arkansas or the public service commission of the State. Then when the cost overruns escalate, the costs are prodigious, they say to us, because you are one of the wholly owned subsidiaries, we will therefore allocate a portion of this plant to you. It just seems to me that that is a highhanded, dictatorial way for anybody to operate, and utility rates—I mean, I can tell you that if the worst-case scenario should come to pass, it would devastate my State. Economically, we would become a Sahara.

So, that is the reason all of us who have any public responsibility there have been screaming like banshees about it. And my concern is not only the immediacy of this case, but getting legislation passed to make sure that this situation doesn't ever occur again.

Mr. Herrington, on the question of natural gas, does this administration intend to send us a natural gas deregulation bill?

Mr. **HERRINGTON**. Well, I think the easy answer is that we have to see what has happened as a result of this January deregulation. I don't know what the decision would be, and I also don't know what the facts that would lead to such a decision are until we have a look at what the ramifications are of what has just taken place.

Senator **Bumpers**. Are you familiar with the concept of incremental pricing?

Mr. **Herrington**. Not at a level that I consider myself well versed in it.

Senator **Bumpers**. Do you know whether or not the administration is going to send us legislation to either amend or repeal the Power Plant and Industrial Fuel Use Act? Are you familiar with that act?

Mr. **Herrington**. I'm familiar with the act. The specific provision that you're referring to, I'm not.

Senator **Bumpers**. If I were to send you questions in writing on those last two issues, could you respond to those?

Mr. **Herrington**. I will do my very best.

Senator **Bumpers**. We want to get you confirmed promptly and quickly, but I still would like to know.

Mr. **Herrington**. I will do my very best to answer those quickly, if possible. And if not, I will provide you further answers in the future, if you want to reraise it with me.

Senator **Bumpers**. Mr. Herrington, you know one of the businesses that the U.S. Government is in the Energy Department, and that is in uranium enrichment. Are you familiar with the problems of our operation of roughly three facilities engaged in uranium enrichment?

Mr. **Herrington**. Yes, sir; on a basic level I am.

Senator **Bumpers**. Well, what do you think about the current state of the enrichment program?

Mr. **Herrington**. I would not have an opinion on it at this time. I don't feel my knowledge level is at a point where I could give you an honest evaluation of where I think the uranium enrichment program is.

Senator **Bumpers**. You know, I——

Mr. **Herrington**. I am concerned about supply of enriched uranium. When we talk about a balanced plan over the future, I think enriched uranium is part of that plan, and I am interested in providing a continued supply to the industry and to the country. I don't know what the ramifications of that basic position are, but I feel that's one of the things we have to address.

Senator **Bumpers**. Well, as you know, we have three facilities operating at about half speed because the world demand for enriched uranium has been declining precipitously. In addition to that, incidentally, we are being scooped by some of our foreign competitors. We used to suppy about 100 percent of the uranium to other countries. I think we're down to about 40 percent right now.

But it seems to me, also, that in these times of budget constraints and trying to save money, the uranium enrichment program might be a place where we could find a lot of dollars.

So you will look at that for me?

Mr. **Herrington**. Yes, Senator, I will.

Senator **Bumpers**. Have you had an opportunity to look over any of the President's tax proposals? Are you familiar—have you familiarized yourself with the tax laws as they relate to energy and energy conservation, both in the incentives for finding energy and incentives for conserving it?

Mr. **Herrington**. No.

Senator BUMPERS. You are not?

Mr. HERRINGTON. No.

Senator BUMPERS. Well, do you believe as a philosophical idea that the U.S. Government should give incentives, tax incentives to the energy industry in order to produce and find more energy?

Mr. HERRINGTON. It depends on what the national policy and goal is. I have no objection to using taxation policy as it relates to industrial policy or supply policy in the economy. A flat rule saying you shall not use tax policy to affect decisions of national policy, I could not support.

Senator BUMPERS. Are you familiar with what the oil and gas industry calls "intangible drilling costs?"

Mr. HERRINGTON. On a general basis, yes.

Senator BUMPERS. In the past, those have been expensed.

Mr. HERRINGTON. Yes.

Senator BUMPERS. They have been allowed to expense those each year they were incurred. Do you favor a continuation of that policy?

Mr. HERRINGTON. If elimination of that policy leads to a severe crippling of the domestic gas and oil industry, then I would have grave doubts about it. But I have not made up my mind on that, and I don't think I know enough to make that decision at this point.

Senator BUMPERS. How about in the fields of conservation, and in the area of cogeneration? As you know, we cogenerate about 1 percent of our energy in this country. I say 1 percent of the energy; it may be that we only cogenerate 1 percent of the electricity we consume in this country. It is very light. And as you know, many of our friends in Western Europe cogenerate up to 10 percent of their total needs. And It seems to me that that is a pretty ripe area for additional electricity in this country at fairly low costs.

Are you familiar with the whole concept of cogeneration, incidentally?

Mr. HERRINGTON. Yes, sir.

Senator BUMPERS. Do you think there should be tax incentives for people to develop cogenerating facilities? And second, do you think the present law which requires utility companies to take electricity from people who cogenerate it should be maintained?

Mr. HERRINGTON. I have not made up my mind on either one of those. I will tell you that cogeneration makes sense to me. I don't know what the tax incentives that you offer on cogeneration mean to the U.S. Treasury. I don't know the magnitude of it. Cogeneration is something that I think needs a good look.

Senator BUMPERS. Incidentally, has the United States been sued by all three States where we're proposing to establish nuclear waste deposits?

Mr. HERRINGTON. I don't believe——

Senator BUMPERS. Texas, I think, has sued.

Mr. HERRINGTON. I don't believe that is the case.

Senator BUMPERS. Has anybody else sued? Well, if we don't get sued, we ought to sue those that don't sue us, shouldn't we? [Laughter.]

Senator BUMPERS. Do you think the Federal Government ought to be liable, once these deposits are established, do you think we ought to be liable for any accidents, spills, or any other adverse environmental effects of the deposits of nuclear waste?

Mr. HERRINGTON. Well, I think on a general concept, yes; but I would hate to leave it open-ended. I think that the law is going to have to describe to what extent the liability should be. You have ample precedent for that in the tort claims acts that we've had over the years, but there's no reason not to make the Government liable on that.

Senator BUMPERS. Are you familiar with the Price-Anderson Act?

Mr. HERRINGTON. Vaguely.

Senator BUMPERS. Well, let me just tell you what it does. It limits the liability of any utility company that has an accident. For example, in the Three Mile Island incident they are limited on how much they will be liable for. The environmentalists think the limit should be taken off. The industry thinks it ought to be tightened up. Where do you come down?

Mr. HERRINGTON. I'm not aware of the exact limits that are set forth in Price-Anderson. I think I was probably——

Senator BUMPERS. Excuse me, Mr. Herrington.

Mr. Chairman, what is the limit now, do you know? Is it $500 million?

Mr. HERRINGTON. I think it is $500 million from what I've read.

Senator BUMPERS. Who knows? Staff?

The CHAIRMAN. $615 million I am advised.

Senator BUMPERS. $615 million for any one accident? I think it was just $300 million when I came here, was it not? It has been raised considerably since then.

Mr. HERRINGTON. I am more of a moderate in this area. I don't see any benefit in having unlimited liability. On the other hand, I don't see any benefit to restrict it totally. So I would fall somewhere in the range of the discussions going on, I'm sure.

Senator BUMPERS. Would you favor continuing tax credits on residential conservation and solar investments? Or do you think they ought to be eliminated?

Mr. HERRINGTON. I think that decision is coming up before the end of the year. I would like to look at it before I answer that. I'm generally in favor of it. As I said earlier, I've used it and I like it.

Senator BUMPERS. How do you feel about the 55-mile-an-hour speed limit?

Mr. HERRINGTON. I'm sorry you asked that. [Laughter.]

Senator BUMPERS. Are you with your friends on that?

Mr. HERRINGTON. That's a——

Senator BUMPERS. We always say, "I'm all right on that issue." [Laughter.]

Mr. HERRINGTON. I have a hard time answering that, because I really can see both sides. There's a tremendous health and safety argument that's going on. There's a tremendous States rights argument on it. And frankly, I'm enjoying driving slower lately. [Laughter.]

I have to dodge that one, Senator. I just don't have an opinion.

Senator BUMPERS. Mr. Chairman, I just have one more question. In 5 months, the authority that the Federal Government now has to involve itself and respond to an oil supply interruption is going to expire. Incidentally, that law also governs the terms under which the Strategic Petroleum Reserve may be used in case of an emergency.

Are you familiar with that law?

Mr. **Herrington**. In a general way again, yes, I am, and the 5-month deadline I'm aware of.

Senator **Bumpers**. Do you have any idea as to whether or not the administration is going to ask for an extension or a repeal or some modification of that law?

Mr. **Herrington**. Senator, I do not have an idea today. I hope to formulate a position on that with sufficient time to advise and work with this committee and come to an intelligent decision on that.

Senator **Bumpers**. We are now putting 211,000 barrels a day in the ground in our Strategic Petroleum Reserve. Do you think that is a satisfactory rate?

Mr. **Herrington**. I don't know. I like the SPR concept. I think you, over the last few years, have done a magnificent job on it. The administration, it is no secret, has been, I guess publicly, recommending at this budget go-around to have a pause in the fill. I think that budget will be up on the Hill next week; and I have heard from various people about whether that is a budgetary decision, or whether we have enough oil in the ground to handle strategic needs.

I don't have an opinion on it because I'm not an expert on it, but I think this is something that we all have to wrestle with. It is a security issue, and maybe the 489 is enough for this year. It has to be weighed against other factors. Maybe it is not. I just don't know.

Senator **Bumpers**. That's it, Mr. Chairman.

Mr. **Herrington**. Thank you, Senator.

Senator **Bumpers**. Thank you, Mr. Herrington.

The **Chairman**. Thank you.

Mr. Herrington, I have just a couple of questions. One is kind of a follow-on to but a broader question than that of the the one concerning Middle South Holding Co.

What do you see as the role of the Department of Energy in support of a strong electric utility industry that can meet the future needs of our society? Do we have a role? Should the Federal Government play a role?

Mr. **Herrington**. I would say yes, for several reasons. The large capital investments that are necessary in that industry, and the high risk nature of some of the projects to me translate to Federal involvement. Also, the aspects of the research and development, the engineering aspects of these especially, are not necessarily something that private enterprise would take on. So if we are going to do a comprehensive and meaningful plan on into the year 2000 and beyond, we're going to have to have Federal Government involvement.

Also, there is no possibility of distribution of electrical energy in this country without crossing jurisdictions, State lines, power rate commissions; that automatically spells a Federal role.

So that's basically my position on that.

The **Chairman**. Mr. Herrington, I have talked to Secretary Hodel over many months about the necessity for a review of the problems that afflict the utility industry. Far too many people have fallen into the trap of assuming a pat answer that the problems of the utility industry are simply nuclear powerplants, and that is the only issue.

I strongly believe it's a much broader issue than that. The issue of how you organize the capacity of companies to compete for funds in a capital market of the nature that we have today; the question of how you deal with individual State regulation of utility companies that operate in more than one State; the question of how you protect consumers' interests against the escalating price of energy in all fields; the consumer reaction that has met increased prices by demanding restraints that sometimes have greatly reduced operating reserves, so-called spinning reserves in the electric utilities; the difficulty of maintaining profitability in the face of current economic conditions that is sufficient to attract an appropriate amount of capital to meet our future needs; and even the question of how to estimate future needs and how to go about the business of determining that within regions of the country they make appropriate plans and pay an appropriate share of meeting their own needs, rather than simply trying to minimize their current expenditures and then make demands upon others who made the investments for the share of what was done.

I think there is quite a lot of shortsightedness on the part of many people, and yet we don't have any national overview that's centered anywhere in the Federal Government or even in the Congress of the United States. Some have questioned whether the Department of Energy is the right place, because it is a regulatory policy problem; and it is a financial problem; it's a financial institution's problem. It is not just simply an energy question.

Do you have any views with respect to the nature of the problem, or what we ought to be doing in order to try to rationalize some responses?

Mr. HERRINGTON. Well, I certainly could not paint the problem any better than you have just done. It would only be a repetition of what you said. I understand the problems and where we are going, but we simply cannot walk away from them because they are there.

My feelings are that this probably does belong at the Department of Energy, if you are going to try to formulate a national energy policy for the next few years. But I have only general concepts of what you're describing; I do not have active experience in the industry such as my predecessor did for a number of years.

The CHAIRMAN. I will look forward to discussing that with you further. Perhaps together we can begin to devise a strategy for at least analyzing the problem and hopefully some solutions to it.

Mr. HERRINGTON. I'll look forward to that.

The CHAIRMAN. Mr. Herrington, the Bonneville Power Administration has recently adopted a new policy for allocating access to the capacity of the Northwest-Southwest Intertie Line. This policy gives BPA and Pacific Northwest Utilities a priority in utilizing the Intertie capacity for sending energy to California markets.

This policy has had several benefits such as more efficient utilization of the Intertie and increasing revenues to Bonneville which may permit BPA to charge lower rates to its Pacific Northwest customers. There are others who view that policy in a different light. Are you familiar with that policy and the problems attendant to it?

Mr. HERRINGTON. In a general way, yes, I am; not on any specific detail where I could be responsive to detailed questions.

The CHAIRMAN. There are a lot of contestants for the use of that Intertie line, and there are beneficiaries. Those benefits can be varied by administrative action. The Bonneville Power Administration has taken action which I think is appropriate, but it's subject to some review by the Department of Energy. I hope you will familiarize yourself with that issue, and I look forward to working with you further on it.

Mr. HERRINGTON. Yes, sir.

The CHAIRMAN. I will ask all members of the committee who have written questions to submit to Mr. Herrington for his response, to have those questions to us so that we may transmit them to Mr. Herrington by the close of business tomorrow. That would permit Mr. Herrington this weekend to answer those questions, so that we may have the responses on Monday, and therefore hopefully be in a position at a Tuesday meeting to act upon the President's nomination. If we can meet that deadline, it would be very helpful.

Mr. HERRINGTON. Thank you, Mr. Chairman. I'll try.

The CHAIRMAN. I might at this time announce that we have letters in support of the nomination of Mr. Herrington from the AnSon Corp., Oklahoma City, OK; the California Energy Commission in Sacramento; Mr. J. Ben Carsey of Houston, TX; the Hughes Tool Co. of Houston, TX; and Swearingen Petroleum Management in Tulsa, OK. Those letters will be made a part of the record at this point.

[The letters follow:]

AN-SON
CORPORATION

January 24, 1985

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
JAN 29 [illegible]
WASHINGTON, D.C. 20510

Mr. James A. McClure, Chairman
United States Senate
Committee on Energy and Natural Resources
Washington, D. C. 20510

Dear Jim:

I am writing to express my support for the confirmation of John Herrington who is proposed by President Reagan to be Secretary of Energy.

I have had the opportunity to meet Mr. Herrington and he certainly appears to be very capable and should make an excellent secretary. Also, some of my friends in the industry who know him much better all speak very highly of him and recognize him as someone with whom our industry could enjoy good communications.

Thank you for any help you may make in this particular instance.

Sincerely,

Carl B. Anderson Jr.

Carl B. Anderson, Jr.
President

CBA:mjs

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MAIL ADDRESS: P.O. BOX 24060 • ZIP CODE 73124

STATE OF CALIFORNIA—THE RESOURCES AGENCY
GEORGE DEUKMEJIAN, Governor

CALIFORNIA ENERGY COMMISSION
CHARLES R. IMBRECHT
Chairman

January 28, 1985

Honorable James A. McClure
Chairman, Committee on Energy
and Natural Resources
United States Senate
SD-361 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Chairman McClure,

I am writing to indicate my personal support of John Herrington as Secretary of the Department of Energy. My exposure to Mr. Herrington as a California attorney and most recently as a member of the White House staff has provided me with a basis to positively judge his ability as a manager with concern for achieving the public's interest with the economic and environmental sensitivity that those of us in pubic service constantly face.

As chairman of the nation's largest state energy office, I am aware of the complex energy issues currently facing the federal government, the states, and the energy and utility industries. How these issues are handled will eventually affect the lives of every energy user, as well as the nation's economic well-being. John Herrington's experience working with the private sector, his expertise as a manager, and his familiarity with how to get things done in Washington (from both the perspective of an assistant secretary and member of the White House staff) make him well-qualified for tackling these tough issues.

It has also been my own experience that an in-depth technical understanding of energy problems is not nearly as important as the ability to build consensus among diverse interest groups. Mr. Herrington has demonstrated these skills in all of the areas in which he has worked.

The California Energy Commission has long enjoyed a close working relationship with the Department of Energy on a wide variety of energy matters. Under the leadership and management of John Herrington, we expect that this cooperative relationship will continue to grow.

I look forward to working with John Herrington on energy issues of mutual concern, and urge your favorable consideration of his nomination as Secretary of the Department of Energy.

Sincerely,

CHARLES R. IMBRECHT
Chairman

1516 Ninth Street, Sacramento, California 95814
(916) 324-3326

J. BEN CARSEY
J. BEN CARSEY, JR.
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SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
JAN 29 1985
WASHINGTON, D.C. 20510

January 25, 1985

Mr. James A. McClure, Chairman
United States Committee on Energy
and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Mr. McClure:

This letter is written in support of John Herrington who has been proposed as Secretary of Energy. Mr. Herrington is a person with whom the oil and gas industry can work. Based on ability and experience, he would made an excelllent head of D.O.E.

I would like to urge you to seriously consider him.

Thank you very much.

Yours very truly,

J. Ben Carsey

J. Ben Carsey

JBC/mdd

HUGHES TOOL COMPANY

JAMES R. LESCH
CHAIRMAN OF THE BOARD AND
CHIEF EXECUTIVE OFFICER

CORPORATE OFFICES
6500 TEXAS COMMERCE TOWER
HOUSTON, TEXAS 77002
TELEPHONE (713) [illegible]

January 25, 1985

JAN 29 85

The Honorable James A. McClure
United States Senate
Committee on Energy and Natural Resources
Washington, D. C. 20510

Dear Senator McClure:

I strongly urge your support of John Herrington's appointment as Secretary of Energy. I believe Mr. Herrington possesses the necessary qualifications to manage the department efficiently in accordance with the President's wishes.

Thank you for supporting John Herrington.

Yours very truly,

James R. Lesch

JRL:mb

Swearingen Petroleum Management
320 South Boston - Suite 1104 • Tulsa, Oklahoma 74103-3784 • Office: (918) 599-0096

January 24, 1985

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
JAN 29 1985
WASHINGTON, D.C. 20510

The Honorable James A. McClure
United States Senate
Chairman--Committee on Energy
  and Natural Resources
Washington, D.C. 20510

Please support the confirmation of Mr. John Herrington as Secretary of Energy.

Respectfully,

Wayne

Wayne E. Swearingen

Mr. HERRINGTON. Thank you, sir.

The CHAIRMAN. I know of no further questions to be addressed to Mr. Herrington at this time. Thank you, Mr. Herrington.

Mr. HERRINGTON. Thank you, Mr. Chairman.

The CHAIRMAN. The next witnesses are Mr. Robert Alvarez and Mr. Norris McDonald. I understand that both of the gentlemen from the Environmental Policy Institute have joined in a prepared statement. That statement has been submitted to the committee. The statement will be placed in the record.

I would invite you to summarize the statement with the main points you would like to make. You may proceed.

STATEMENT OF ROBERT ALVAREZ, DIRECTOR, NUCLEAR POWER AND WEAPONS PROJECT, ENVIRONMENTAL POLICY INSTITUTE, ACCOMPANIED BY NORRIS McDONALD, DIRECTOR, ENERGY CONSERVATION PROJECT

Mr. ALVAREZ. Thank you. Mr. Chairman, members of the Committee, I am Robert Alvarez of the Environmental Policy Institute. Next to me is Mr. Norris McDonald.

The Environmental Policy Institute is a nonprofit, public interest organization engaged in research, public education, litigation, and lobbying. EPI is involved in national policy on energy, agriculture, natural resources, environmental and public health protection.

I am grateful for this opportunity to present our views relative to the nomination of Mr. John Herrington for Secretary of Energy. In this regard, we are not here to take a position on whether or not Mr. Herrington should be Energy Secretary. Rather, we are here to offer certain insights concerning energy policy and the Department of Energy's nuclear energy and energy conservation programs. Mr. Herrington will be assuming responsibility over DOE at a time when several difficult issues have emerged which will require his attention.

They include, the first of which, is the militarization of civilian nuclear activities. For the past 4 years, the DOE has been blurring the distinctions between civilian and military nuclear activities in a manner which undermines the long-term goals of the United States to stem the proliferation of nuclear weapons.

Under Mr. Hodel's predecessor, Dr. James Edwards, DOE began its move to allow for the use of plutonium generated from commercial nuclear powerplants for the manufacture of nuclear weapons. This prompted Congress to pass an amendment to the 1954 Atomic Energy Act which prohibits the DOE from doing this. The DOE has been opposed to this particular law, and in our view is violating the spirit of the law.

Specifically, DOE is now moving to divert several tons of plutonium at several DOE civilian nuclear facilities for the manufacture of nuclear weapons.

Four tons of this plutonium has been generated by civilian Britisn nuclear powerplants. The DOE refuses to foreclose the option of using this plutonium for weapons, despite the fact that the Thatcher government has consistently stated to the British Parliament that they have reassurances the United States will not militarize this plutonium.

Some of Britain's plutonium is in the fuel core prototype of the Clinch River breeder reactor, otherwise known as the fast flux test facility, in Washington State. The FFTF is the largest remaining breeder R&D Program of the U.S. Government. The diversion of plutonium from the FFTF for the manufacture of nuclear weapons sends the wrong signals to nations with advanced breeder programs, particularly France.

At this time, France is using its prototype "phenix" breeder reactor to provide plutonium for its nuclear weapons program and major questions have been raised in the U.S. State Department about the military potential of the "Super-Phenix" breeder reactor, a joint venture France has with several nations.

This problem is underscored by a recent report of the General Accounting Office which found that highly enriched uranium sent from civilian research reactors in different nations is being used in driver rods in reactors at DOE's Savannah River plant to make nuclear explosives.

We urge Mr. Herrington to make clear distinctions between civilian and military nuclear activities by not allowing the diversion of the British plutonium for nuclear weapons and barring the use of highly enriched uranium from civilian research reactors for the manufacture of nuclear explosives.

Another area deals with excess cancers amongst DOE nuclear workers. For the past 10 years, disturbing evidence generated by DOE contract researchers indicates that several populations of DOE nuclear workers are dying of cancer at rates greater than the general public. Moreover, this information has been misrepresented and distorted by the DOE in a way which has prompted union officials representing DOE nuclear workers to call for legislation transferring this research to a public health agency. We hope that Mr. Herrington will support such legislation.

The next area deals with the refusal of the DOE to comply with environmental protection laws. The Department of Energy owns over 280 nuclear facilities which are capable of inflicting over $460 million in damages from accidental and nonroutine releases of radioactivity. Some of these facilities have the capability of inflicting over $500 million, which is the limit set under the Price-Anderson Act.

At the Oak Ridge, TN, Y-12 weapons plant, 2.6 million pounds of mercury were discharged directly into the environment without regard for public health or environmental protection. At DOE's Savannah River Plant, some 10 tons of mercury have been dumped into shallow burial pits. This mercury is now being found in outcrops from contaminated ground water on the site.

The major issue here is the refusal of the DOE to comply with state-of-the-art environmental protection standards. Major nuclear facilities owned by the DOE utilize soil columns and ground water as disposal mediums from radioactive and nonradioactive wastes. This practice is obsolete and dangerous, yet DOE refuses to alter their design so that this severe form of environmental contamination can stop.

Additionally, DOE has consistently refused to comply with provisions contained in the Resource Conservation and Recovery Act and the 1977 Clean Air Act Amendments. Instead of serving as a yardstick for private industry to follow, DOE is the biggest violator of toxic waste laws and is operating under radiation protection standards that are now over 25 years old. For example, people living near a DOE nuclear facility such as Idaho Falls are allowed to receive 20 times more radiation annually than if they were living near a commercial nuclear powerplant.

We hope that Mr. Herrington will bring DOE into compliance with the same standards that are applied to the commercial nuclear industry.

In terms of high-level radioactive wastes, on December 18 of last year the Environmental Policy Institute and a coalition of other environmental and citizen organizations filed a lawsuit challenging the DOE's guidelines for the selection of sites for a high-level nuclear waste repository.

The suit alleges that the DOE violated the requirements of the Nuclear Waste Policy Act in publishing final site selection guidelines that do not take into account the extremely serious impacts of a waste dump on public health, the economy, and the environment. Instead, the guidelines are so vague and imprecise that DOE can rely on them merely to ratify their selection of one of the nine sites that has been under consideration for years.

We regret having to go to court to alter DOE's behavior, but in their desire to solve the nuclear waste problem as fast as they can I think it is not taking into account the long-term implications of its policies.

We hope that DOE under Mr. Herrington will be more responsive to these concerns than his predecessor.

I would like at this time to turn over the remainder of my testimony to Mr. McDonald.

The CHAIRMAN. Mr. McDonald.

STATEMENT OF NORRIS McDONALD, DIRECTOR, ENERGY CONSERVATION PROJECT, ENVIRONMENTAL POLICY INSTITUTE

Mr. McDONALD. Mr. Chairman, and members of the committee, my name is Norris McDonald. I am the Director of the Energy Conservation Project of the Environmental Policy Institute.

Mr. Chairman, I would like to request that the record show that I am here to testify.

The CHAIRMAN. We couldn't avoid having that shown if we tried, and we have no desire to avoid it. [Laughter.]

Mr. McDONALD. I am delighted to appear before you today to testify on the nomination of Mr. Herrington for Secretary of Energy. As my colleague, Mr. Alvarez, stated we are not here to take a position on whether or not Mr. Herrington should be Energy Secretary.

I am here to offer certain insights concerning energy policy and the Department of Energy's energy conservation programs. EPI believes that the Department of Energy should have strong leadership because of the many pressing energy issues that face the Nation. These issues range from nuclear weapons and energy emergency preparedness to low cost weatherization retrofits for poor Americans.

The institute does not dispute the right of the President to organize the executive branch to his choosing with people who share his visions. However, EPI hopes that the Senate will, in examining the qualifications of Mr. John S. Herrington, give appropriate consideration to the nominee's understanding of the importance of Federal energy conservation programs.

EPI is concerned about public statements made by Mr. Herrington that he is not totally lacking in energy experience; but that he is comfortable with nuclear and other energy issues. In these statements, Mr. Herrington has mentioned that he has made a number of contacts in the energy field.

EPI has not seen any references to energy conservation contacts. EPI is concerned that Mr. Herrington will continue to promote the management and funding imbalance at DOE which unreasonably favors nuclear programs over civilian energy programs, especially energy conservation programs.

Though Mr. Herrington does not have direct experience with managing energy programs, we would hope that he understands the importance of Federal energy conservation programs.

Concerning the Department of Energy's energy conservation budget, EPI supports adequate funding for the Department of Energy's energy conservation program. We agree with the administration's position that the marketplace is effective in stimulating the development of conventional resources and alternative technologies. We strongly disagree with the administration's position eliminating the Federal role in stimulating increased energy conservation development.

The administration has consistently proposed eliminating DOE's energy conservation programs. These programs have ranged from zero funding or alternative funding schemes such as the oil overcharge money substitution to agency malpractice. A few examples of the malpractice include various personnel shifts, what I consider to be the no standard standard for appliance efficiency, lax implementation of the residential conservation service program, eliminating the Assistant Secretary for Conservation and Renewable Energy.

Under the energy conservation programs of the Department of Energy itself, the administration has consistently proposed, as I mentioned earlier, eliminating these programs. EPI strongly opposes eliminating DOE's energy conservation programs. EPI also opposes replacing regularly appropriated funding for these programs with oil overcharge funds, though we do support supplementing the programs with oil overcharge funds.

The DOE's Low-Income Weatherization Assistance Program really needs leadership. Is Mr. Herrington sympathetic to the needs of poor Americans, especially the elderly? Does Mr. Herrington have experience and contacts with poor people? Is Mr. Herrington familiar with the Department of Energy's Low-Income Weatherization Assistance Program? Does Mr. Herrington believe that higher energy prices—that is, the marketplace—stimulate poor Americans to invest in energy efficiency retrofits? Will Mr. Herrington defend this program and give it the priority treatment that the nuclear area has enjoyed for years? Mr. Herrington has an opportunity to implement a fresh approach to providing energy efficiency retrofits to low-income people.

The administration is proposing to eliminate the Schools and Hospitals Program and the Energy Extension Service Programs. The Schools and Hospitals Program provides funding to states to conduct energy audits and engineering analyses, as well as providing for the acquisition and installation of energy efficiency measures.

The Energy Extension Service Program provides much needed funding to States to establishing technical assistance and energy information to the residential sector, local governments, small businesses, public institutions and individuals.

Does Mr. Herrington appreciate the importance of transportation and industrial energy conservation? The Department of Transportation recently requested a response from DOE on rolling back light truck fuel economy standards. DOE had no comment. If DOT proposes to roll back automobile fuel economy standards, will DOE have a response?

Is Mr. Herrington aware that a 40 to 60 mile per gallon auto fleet by 1995 could save the United States from 2 to 3 million barrels of oil per day? Is Mr. Herrington aware that cogeneration, next to automobile fuel economy, is one of the Nation's largest opportunities for saving energy?

In testimony today, the strategic petroleum reserve was brought up. How familiar is Mr. Herrington with the strategic petroleum reserve and the International Energy Agency? The operation of these two entities would be vital to the economic stability of the world during a long-term energy crisis.

Does Mr. Herrington believe that we do not need a specific plan for using the strategic petroleum reserve? Is Mr. Herrington satisfied with the performance of the United States in the International Energy Agency? Would Mr. Herrington like to see a test sale of strategic petroleum reserve oil?

Is Mr. Herrington aware of the budding shared savings energy services industry? Is Mr. Herrington aware of the potential of this unique energy management approach to supplement and improve the Weatherization Program, the Schools and Hospitals Program, and the utility audit programs?

Mr. Chairman, for the record, the reason I would not have been able to be here was because I am currently negotiating planning agreements with the District Housing Authority to bring in energy service companies, energy conservation companies, to retrofit public housing. We believe that the aspects of the public-private partnership in this regard has tremendous potential, and I would look forward to meeting with Mr. Herrington, if he is confirmed, to discuss this matter further.

Finally, will Mr. Herrington be open to constructive suggestions from environmental groups? If Mr. Herrington is confirmed, and if Mr. Herrington is willing to support DOE's energy conservation programs, then EPI will make every effort to establish a mutually respectful working relationship.

[The joint prepared statement of Mr. Alvarez and Mr. McDonald follows:]

ENVIRONMENTAL POLICY INSTITUTE

January 30, 1985

TESTIMONY OF
ROBERT ALVAREZ* AND NORRIS MCDONALD**
BEFORE THE COMMITTEE ON ENERGY AND NATURAL RESOURCES OF THE UNITED STATES SENATE
REGARDING THE NOMINATION OF JOHN HERRINGTON FOR SECRETARY OF ENERGY

Mr. Chairman and members of the Committee, I am Robert Alvarez of the Environmental Policy Institute. Mr. McDonald was intending to testify with me but could not because of a more pressing matter. The Environmental Policy Institute (EPI) is a non-profit, public interest organization engaged in research, public education, litigation and lobbying. EPI is involved in national policy on energy, agriculture, natural resources, environmental and public health protection.

I am grateful for this opportunity to present our views relative to the nomination of Mr. John Herrington for Secretary of Energy. In this regard, we are not here to take a position on whether or not Mr. Herrington should be Energy Secretary. Rather, we are here to offer certain insights concerning energy

*Director, Nuclear Power and Weapons Project

**Director, Energy Conservation Project.

policy and the Department of Energy's (DOE) nuclear and energy conservation programs. Mr. Herrington will be assuming responsibility over DOE at a time when several difficult issues have emerged which will require his atention. They include:

THE MILITARIZATION OF CIVILIAN NUCLEAR ACTIVITIES

For the past four years, the DOE has been blurring the distinctions between civilian and military nuclear activities in a manner which undermines the long-term goals of the United States to stem the proliferation of nuclear weapons from the "peaceful atom." Under Mr. Hodel's predecessor, Dr. James Edwards, DOE began it's moves to allow for the use of plutonium generated from commercial nuclear power plants for the manufacture of nuclear weapons. This prompted the passage of an amendment to the 1954 Atomic Energy Act by Congress, (the Hart-Mitchell-Simpson Amendment) in 1982 which prohibits DOE from doing this. The DOE was opposed to foreclosing this option and continues in our view to violate the spirit of this law.

Specifically, DOE is now moving to divert several tons of plutonium at several DOE civilian nuclear R&D facilities for the manufacture of nuclear weapons. These facilities are eligible for application of safeguards by the International Atomic Energy Agency (IAEA) under the U.S./IAEA Safeguards Agreement and

Associated protocol. More than 200 U.S. nuclear facilities are covered under the U.S./IAEA Safeguards Agreement unanimously ratified by the Senate in 1980.

Some 4 tons of this civilian R&D plutonium is from British nuclear power plants. DOE refuses to foreclose the option of using this plutonium for weapons, despite the fact that the Thatcher government has consistantly stated to the British Parliament that they will not militarize this plutonium. This has become a highly controversial issue in Great Britain, particularly in the debate over the British goverment's proposal to embark on an ambitious nuclear power program relying on U.S. reactor designs.

Some of Britain's plutonium is in the fuel core of the Fast Flux Test Facility (FFTF) at DOE's Hanford operation in Washington state. The FFTF is the fuel core prototype of the cancelled Clinch River Breeder Reactor and is the largest remaining breeder R&D facility of the U.S. government. The diversion of plutonium from the FFTF for the manufacture of nuclear weapons sends the wrong signals to nations with advanced breeder programs, particularly France. At this time France is using it's prototype "phenix" breeder reactor to provide plutonium for its nuclear weapons program and major questions have been raised in the U.S. stae department about the military potential of the "Super-Phenix" Breeder reactor, a joint venture

France has with several European nations.

According to a letter to members of Congress last year signed by several prominent experts in the field of arms control and non-proliferation, (including Gerard Smith, chief of the SALT I delegation) "the DOE is destroying the barrier between civilian and military nuclear programs. This barrier is an essential festure of the U.S. efforts over the past 25 years to control the global spread of nuclear weapons."

This problem is underscored by a recent report of the General Accounting Office which found that highly-enriched uranium (HEU) sent from civilian research reactors in different nations is being used in "driver rods" in reactors at DOE's at the Savannah River Plant in South Carolina to make nuclear explosives.

We urge Mr. Herrington to make clear distinctions between civilian and military nuclear activities by not allowing the diversion of the British plutonium for nuclear weapons and barring the use of HEU from civilian research reactors for the manufacture of nuclear explosives.

EXCESS CANCERS AMONG DOE NUCLEAR WORKERS

For the past 10 years, disturbing evidence generated by DOE contract researchers indicates that several populations of DOE for legislation transferring this research to a public health agency. (see attachment)

Currently DOE funds almost 60 percent of all radiation health effects research. This research is used to develop radiation exposure standards and to determine compensation for purpose of compensation for radiation-related injuries. This conflict of interest between nuclear promotion and public health protection has seriously eroded public and worker confidence in the ability of the DOE to protect public health and safety. We urge that Mr. Herrington support the transfer of radiation epidemiology now under control by DOE to a public health agency in the Department of Health and Human Services. In fact, legislation has been introduced by Rep. Timothy Wirth (D-CO) to do this very thing.

REFUSAL TO COMPLY WITH ENVIRONMENTAL PROTECTION LAWS

The Department of Energy owns over 280 nuclear facilities which are capable of inflicting over 460 million in damages from accidental or non-routine releases of radioacitviity. Several of these facilities also have generated large quantities of non-radioactive toxic materials which have been discharged directly into the environment. At the Oak-Ridge, Tennessee Y-12 weapons plant 2.6 million pounds of mercury were discharged non-radioactive toxic materials which have been discharged directly into the environment. At the Oak-Ridge, Tennessee Y-12 weapons plant 2.6 million pounds of mercury were discharged directly into the environment without regard for public health or environmental protection. At DOE's Savannah River Plant some 10 tons of mercury have been dumped into shallow burial pits. This mercury is now being found in outcrops from contaminated groundwater on the site.

The major issue here is the refusal of the DOE to comply with state-of-the-art environmental protection standards. DOE nuclear facilities, without exception utilize soil columns and groundwater as disposal mediums from radioactive and non-radioactive wastes. This practice. is obsolete and dangerous. Yet DOE refuses to alter their designs so that this severe form of environmental contamination can stop.

Additionally, DOE has consistently refused to comply with provisions contained in the Resource Conservation and Recovery Act (RCRA) and the 1977 Clean Air Act amendments. Instead of serving as a "yardstick" for private industry to follow, DOE is the biggest violator of toxic waste laws and is operating under radiation protection standards that are now over 25 years old. For example, people living near a DOE nuclear facility are allowed to receive 20 times more radiation exposure annually than permitted for commerical nuclear power plants.

We hope that Mr. Herrington will bring the DOE into compliance with the same standards that are applied to commercial industries.

HIGH-LEVEL RADIOACTIVE WASTES

On December 18, 1984, the Environmental Policy Institute and a coalition of other environmental and citizen organizations filed a lawsuit challenging the Department of Energy's guideline for the selection of sites for a high-level nuclear waste repository. The suit was filed in the U.S. Court of Appeals for the Ninth Circuit in San Francisco, as required by the Nuclear Waste Policy Act of 1982. (NWPA).

The suit alleges that the Department of Energy (DOE) violated the requirements of the NWPA in publishing final site-selection guidelines that do not take into account the extremely serious impacts of a waste dump on public health, the economy and the environment. Instead, the guidelines are so vague and imprecise that DOE can rely on them merely to ratify their selection of one of the nine sites that has been under consideration for years. By contrast, in passing the NWPA, Congress specifically found that past federal efforts to locate a waste disposal site "have not been adequate" and required that the nine previously identified sites be carefully scrutinized so that any inappropriate sites would be eliminated early in the process of site selection.

EPI is asking the Ninth Circuit to enjoin DOE from reaching a final decision on the selection of repository sites until the guidelines have been revised to conform with the NWPA's requirements. For years, EPI has been working with citizen groups in the six affected states (Texas. Washington. Nevada, Mississippi, Utah and Louisiana), as well as Indian tribes and state officials, to convince DOE to revise the guidelines. But DOE has rejected all of these parties' concerns, leaving us no choice but to challenge the guidelines in court. It is unfortunate that we have had to resort to litigation to alter DOE's current behavior of "solving the nuclear wast problem" as fast as it can, regardless of the long-term implications of its policies. We hope that DOE under Mr. Herrington will be more responsive to these concerns than his predecessor.

ENERGY CONSERVATION

EPI believes that the Department of Energy should have strong leadership because of the many pressing energy issues that face the nation. These issues range from nuclear weapons and energy emergency preparedness to low cost weatherization retrofits for poor Americans. The Institute does not dispute the right of the President to organize the Executive Branch to his choosing, with people who share his visions. However, EPI hopes that the Senate will, in examining the qualifications of Mr. John

S. Herrington, give appropriate consideration to the nominee's understanding of the importance of federal energy conservation programs.

EPI is concerned about public statements made by Mr. Herrington that he is not totally lacking in energy experience; but, that he is comfortable with "nuclear" and other energy issues. In these statements, Mr. Herrington has mentioned that he has made a number of contacts in the energy field. EPI has not seen any references to energy conservation contacts. EPI is concerned that Mr. Herrington will continue to promote the management and funding imbalance at DOE which unreasonably favors nuclear programs over civilian energy programs. especially energy conservation programs. Though Mr. Herrington does not have direct experience with managing energy programs, we would hope that he understands the importance of federal energy conservation programs.

DOE Energy Conservation Program Budget

EPI supports adequate funding for the DOE's Energy Conservation Programs. We agree with the Administration position that the marketplace is effective in stimulating the development of conventional resources and alternative technologies. We strongly disagree with the Administration's position of eliminating the Federal role in stimulating increased energy conservation development. The Administration has consistently proposed eliminating DOE's Energy Conservation Programs. These proposals have ranged from zero funding or alternative funding schemes (oil overcharge money substituion) to Agency malpractice.

Federal energy conservation programs have contributed, and could continue to contribute, significantly to improving the nation's energy use. A recent study by Oak Ridge National Laroratory estimated that the country now uses almost 20 percent less energy than it would have if energy policies had not changed in the 1970's. According to the Oak Ridge Study, energy price increases caused two thirds of the conservation response in the United States. The study suggests that the remaining third may be due to a variety of government measures such as automobile fuel economy standards. Clearly, federal energy conservation programs have significantly contributed to reducing the nation's need to import oil.

DOE Energy Conservation Programs

The Administration has consistently proposed either eliminating DOE's Energy Conservation Programs or replacing regualarly appropriated funding of the programs with oil overcharge money. EPI strongly opposes eliminating DOE's Energy Conservation Programs. EPI also opposes replacing regularly appropriated funding for these programs with oil overcharge funds. If Mr. Herrington supports elimination of DOE's Energy Conservation Programs, then EPI would strongly oppose his nomination as the Secretary of Energy.

The DOE's Low-Income Weatherization Assistance Program needs leadership. Is Mr. Herrington sympathetic to the needs of poor Americans, especially the elderly? Does Mr. Herrington have experience and contacts with poor people. Is Mr. Herrington familiar with the DOE's Low-Income Weatherization Assistance Program? Does Mr. Herrington believe that higher energy prices (the marketplace) will stimulate poor Americans to invest in energy efficiency retrofits? Finally, will Mr. Herrington defend this program and give it the priority treatment that the nuclear area has enjoyed for years? Mr. Herrington has an opportunity to implement a fresh approach to providing energy efficiency retrofits to low-income people.

There are 13 million remaining homes which are eligible for retrofits under DOE's Weatherization Assistance Program. At current funding levels, it would take over 50 years to complete the weatherization of these homes. The current funding level for the Weatherization Program is about $200 million per year, when, in order to retrofit the remaining homes in a ten year period, it would take approximately $2 billion per year. The oil overcharge money could help if it were used to supplement current funding, but is not nearly enough, or reliable, money. What are Mr. Herrington's ideas about retrofitting these homes?

The DOE eliminated the federal Appliance Efficiency Standards Program by issuing a "no-standard" standard in 1982. The DOE is currently considering a proposal by 26 States to

The DOE is currently considering a proposal by 26 States to continue their own standards. The fate of the "no-standard" standard is currently pending in court. Does Mr. Herrington support this expression of "states rights". Is Mr. Herrington familiar with the appliance efficiency program? Does Mr. Herrington believe that a national standard would save a significant amount of energy?

The Administration is proposing to eliminate the DOE Schools and Hospitals Program and the Energy Extension Service Programs. The Schools and Hospitals Program provides funding to states to conduct energy audits and engineering analyses, as well as providing for the acquisition and installation of energy efficiency measures. The Energy Extension Service Program provides much needed funding to states for establishing technical assistance and energy information to the residential sector, local governments, small businesses, public institutions and individuals. These programs are vital. Approximately 33,000 schools and 5,000 hospitals have received grants to finance energy conservation improvements. There are 295,000 school buildings and 15,000 hospital buildings eligible for grants under this (matching grants) program. Does Mr. Herrington agree with eliminating these programs? If not, would he forcefully defend these programs before David Stockman and President Reagan?

Does Mr. Herrington support Energy Conservation Research and Development Programs? The Buildings and Community Systems Programs are very important if the nation is to achieve energy independence. These programs include appliance standards, the Residential Conservation Service (RCS) and Commercial and Apartment Conservation Service Program, Building Energy Performance Guidelines, Cogeneration and District Heating, Federal Energy Management Program, among others.

Does Mr. Herrington appreaciate the importance of transportation and industrial energy conservation? The Department of Transportation (DOT) recently requested a response from DOE on rolling back light truck fuel economy standards. DOE had no comment. If DOT proposes to roll back automobile fuel economy standards, will DOE have a response? Is Mr. Herrington aware that a 40 to 60 mile per gallon auto fleet by 1995 could save the U.S. 2 to 3 million barrels of oil per day? Is Mr. Herrington aware that cogeneration, next to automobile fuel economy, is one of the nation's largest opportunities for saving energy?

Is Mr. Herrington familiar with the operation of the Strategic Petroleum Reserve and the International Energy Agency? The operation of these two entities would be vital to the economic stability of the world during a long term energy crisis. Does Mr. Herrington believe that we do not need a specific plan for using the Strategic Petroleum Reserve? Is Mr. Herrington satisfied with the performance of the U.S. in the International

Energy Agency? Would Mr. Herrington like to see a "test sale" of Strategic Petroleum Reserve oil?

Is Mr. Herrington aware of the budding shared savings, energy services industry? Is Mr. Herrington aware of the potential of this unique energy management approach to supplement and improve the Weatherization Program, the Schools and Hospitals Program, and the utility audit programs?

Finally, will Mr. Herrington be open to constructive suggestions from environmental groups? If Mr. Herrington is confirmed, and if Mr. Herrington is willing to support DOE's Energy Conservation Programs, then EPI will make every effort to establish a mutually respectful working relationship.

In conclusion, we have tried in general terms to outline our concerns about some of the issues that Mr. Herrington will face as DOE Secretary. We look forward to working with him in attempting to resolve them. This concludes my statement. Thank you.

April 20, 1984

Honorable John D. Dingell
Chairman, House Energy and Commerce Committee
Rayburn House Office Building
Room 2221
Washington, D.C. 20515

Dear Mr. Chairman:

We are writing to express our support for section 214 (b) of the Department of Energy Authorization Bill (HR 5048) that was recently reported by the Subcommittee on Energy Conservation and Power. Over the next few years, the DOE plans to divert several tons of plutonium from their civilian nuclear research and development program for nuclear weapons production. Section 214 (b) effectively bars the Energy Department from diverting plutonium "used or produced in, or obtained" from civilian nuclear R&D facilities for the manufacture of nuclear weapons. Moreover, it prevents the DOE from undermining the non-proliferation goals of the United States.

Having helped formulate nuclear policies for the United States, we find that the DOE is destroying the barrier between civilian and military nuclear programs. This barrier is an essential feature of U.S. efforts over the past 25 years to control the global spread of nuclear weapons.

By using the time-honored "shortage" argument, the DOE justifies this dangerous policy in order to provide plutonium for warheads which Congress has not authorized. The House Armed Services Committee in its report on the DOE FY 1984 Military Applications Authorization bill, underscores this point by stating that, "there is no basis to assume that large numbers of new [nuclear] weapons will be produced in the years beyond 1990."

In reality, the DOE is attempting to build a costly multi-billion dollar "surge" capacity above and beyond the arsenal requirements. The DOE can and already is meeting its plutonium requirements by recycling older warheads. Moreover, we believe that U.S. stocks of strategic nuclear materials are greater than those of the Soviet Union. A "surge" warhead production capacity is absurd in light of the fantastic destructive potential of about 26,000 nuclear warheads estimated to be in the U.S. arsenal. Plutonium used in DOE's civilian R&D facilities have the potential to provide thousands of additional nuclear weapons.

The DOE proposes to use plutonium in facilities which are eligible for the application of safeguards by the International Atomic Energy Agency (IAEA) under the U.S./IAEA Safeguards facilities are covered under the U.S./IAEA safeguards agreement unanimously ratified by the Senate in 1980. The IAEA can apply safeguards on all fissionable material contained in these facilities. This has not yet happened. Although the U.S. can withdraw this plutonium for military uses, this would cause serious and far-reaching damage to the international non-proliferation regime.

Additionally, some 4 tons of this civilian R&D plutonium is from British nuclear power plants. The DOE refuses to foreclose the option of using this plutonium at a later date for nuclear weapons. This has become a highly controversial issue in Great Britain, particularly in the debate over the British government's proposal to embark on an ambitious nuclear power program relying on American reactor designs. The destruction of the institutional barrier by the DOE between civilian and military nuclear programs is already being felt in other nations.

Some of Britain's plutonium is in the fuel core of the Fast Flux Test Facility (FFTF) at the Hanford, Washington operations. The FFTF is the fuel core prototype of the cancelled Clinch River Breeder Reactor and is the only remaining major breeder R&D facility of the U.S. government. By diverting plutonium from the FFTF to weapons production, the U.S. would send a dangerous signal to nations with advanced breeder programs, particularly France. Major questions have already been raised in the U.S. State Department about the military potential of the "Super-Phenix" Breeder Reactor, a joint venture France has with several European nations.

We strongly urge that you support section 214 (b) so that we can preserve our non-proliferation policies and insure that future efforts by the DOE to militarize civilian nuclear programs will not occur.

Sincerely,

Gerard C. Smith
former Chief of the SALT I
Delegation and U.S. Governor
International Atomic Energy Agency
Board

Herbert Scoville, Jr.
former Deputy Director,
Central Intelligence Agency

George Rathjens

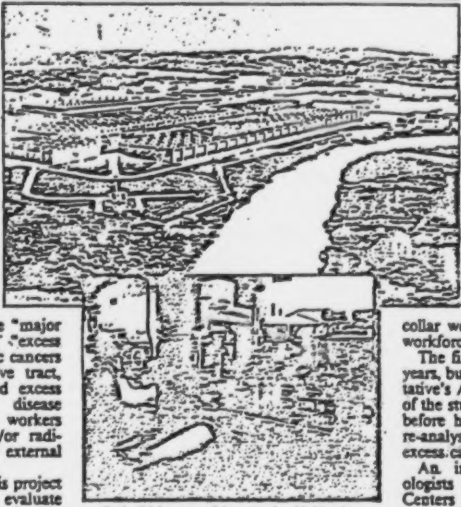
George Rathjens
former Chairman, Management
Committee on U.S. participation
in the International Fuel Cycle
Evaluation (INFCE)

Charles Van Doren

Charles Van Doren
former Assistant Director
on Non-Proliferation,
U.S. Arms Control and
Disarmament Agency

High cancer rates found in nuclear plants

Catherine Caufield



Oak Ridge: working in the Y-12 plant

CANCER rates are higher than average in four nuclear facilities run by the US Department of Energy (DOE) according to unpublished documents. The documents, shown to *New Scientist*, give credence to the controversial contention that the risk of cancer from low-level radiation is many times greater than officially admitted in the US and Britain. They will fuel demands in the US that all research into the health effects of radiation be moved from the DOE to the Department of Health and Human Services.

The new evidence is contained in internal "project summaries" covering most of the projects in the DOE's Health and Mortality Study. The "major research result" cited is that "excess mortality due to site/type specific cancers (leukaemia, lung, brain, digestive tract, prostate, Hodgkin's disease) and excess nonmalignant respiratory disease morbidity were found among workers exposed to uranium dusts and/or radiations from other internal and external sources".

The document continues: "This project provides an opportunity to evaluate scientifically the risks to human health, particularly the cancer risks, of protracted exposure to low doses of ionising radiation. Radiobiological and epidemiological evidence suggests these risks may differ from those associated with simple or fractioned high doses on which current risk estimates are based."

The summaries cover all 21 investigations of DOE nuclear facilities being carried out by Oak Ridge Associated Universities (a think tank connected to the DOE's Oak Ridge National Laboratory) and the University of South Carolina. Another seven studies are being conducted by Los Alamos National Laboratory and Battelle Northwest Laboratory, both DOE facilities. Excess cancers among nuclear workers have been found in three-quarters of the 12 studies that have so far yielded major research results. All four DOE plants examined have excess cancers. The results are that:

- Workers at the Oak Ridge National Laboratory have a 49-per-cent excess leukaemia mortality compared to the general public. "Leukaemia mortality did demonstrate a gradient with increasing radiation dose."
- Janitors, labourers, maintenance men and construction workers at the laboratory have a "significant excess risk" of radiation-associated cancers.
- Workers at Oak Ridge's Y-12 Tennessee Eastman uranium-processing plant between 1943 and 1947 had "significant excess of deaths from lung cancer when compared to US white male rates".
- Workers at Oak Ridge's Y-12 Union Carbide weapons plant had "excess death for cancer of lung, brain and central nervous system, Hodgkin's disease, and other lymphatic tissue".
- Workers at Oak Ridge's gaseous diffusion plant exhibit "excess deaths due to lung and brain cancers and respiratory disease".
- Workers at the DOE's Fernald, Ohio, uranium-processing plant, have a 36-per-cent excess of digestive cancers. Also, "there is an association between exposure to uranium and the development of non-malignant respiratory disease events".
- A study of 2529 workers at various DOE facilities who were reported to have received more than five rems of radiation in a year found six cases of cancer of the rectum, when only two were expected.

In addition, a 1976 study of employees at the DOE's Savannah River Plant (operated by DuPont) found a 60-per-cent excess of lung cancers in male white-collar workers, and a 114-per-cent excess of leukaemia among male blue-collar workers, as compared to DuPont's workforce as a whole.

The findings were kept secret for seven years, but last year the House of Representative's Armed Services Committee learnt of the study and asked to see it. The week before handing it over, DuPont officials re-analysed the data in such a way that the excess cancers disappeared.

An independent panel of epidemiologists convened by the government's Centers for Disease Control in Atlanta reviewed the DuPont study and unanimously condemned the "switch of statistical analysis . . . as inappropriate". The group also recommended that the data be re-analysed by scientists unconnected to the DOE or DuPont.

The DOE denies that there is any evidence linking the excess cancers found in the Health and Mortality Study to radiation exposure. Dr Robert Goldsmith, the department's chief epidemiologist, said this week: "None of the excesses show a correlation with external, low-level radiation exposure." This conflicts with the statement in the unpublished project summary that the evidence of the studies suggests that current risk estimates may be too low, and with the finding that leukaemia mortality at Oak Ridge National Laboratory is explicitly linked to radiation exposure.

The DOE's study of workers' health began in 1964, when Dr Thomas Mancuso of the University of Pittsburgh was given a contract to examine workers at the Hanford nuclear facility in Washington state. In 1977 Mancuso and his colleagues published their findings. The risk of radiation-induced cancer, they reported, might be from 10 to 30 times greater than current exposure limits assume. But the statistical analysis that Mancuso used to reach this conclusion has been the subject of some controversy, and all subsequent DOE health studies have been conducted by the department's own scientists.

Now Congressman Tim Wirth, whose Colorado constituency includes the DOE's Rocky Flats nuclear weapons facility, ▶

OBSERVER David Austin
SEE IF YOU CAN GET YOUR DoE TO BUILD US A REPLICA GREENHAM COMMON.
STONEHENGE REPLICA-TO AVOID DAMAGE BY CROWDS

epidemiological studies of the effects of radiation to the Secretary of Health and Human services. "The DOE doesn't have the objectivity to conduct these investigations," said Steve Coffin, one of Wirth's aides.

The bill has the support of union leaders at the major nuclear facilities. In a letter to Congressional representatives they say, "while we are being reassured by DOE and its contractors that there are no major health problems in the DOE workforce, evidence to the contrary has been accumulating since 1974".

But the DOE will fight hard to keep control of the almost $60 million a year it now spends on research into the health and environmental effects of radiation. "My office is totally independent of the weapons programme," said Charles Eddington, associate director of the department's office of health and environmental research. He angrily rejects accusations of bias. "But Congress has said that we should conduct research in support of energy-development technology and the nuclear weapons programme. That is a mandate," he said.

"This is long overdue for those of us within the DOE jurisdiction," said Jerry Harden, President of the Rocky Flats Steelworkers Union. But Harden is philosophical about the bill's chances. "The DOE is very protective and normally things just don't go very well when you try to erode their territory." □

Plutonium twist

FRESH controversy over the fate of plutonium produced in British nuclear reactors was sparked this week in evidence from the Campaign for Nuclear Disarmament (CND). The evidence, which will be discussed at the Sizewell-B public inquiry this month, includes a detailed examination of exchanges of fissile material between Britain and the US under the 1958 Mutual Defence Agreement.

This evidence has been researched by Dr Ross Hesketh, the former CEGB scientist who was sacked for his public criticism of official assurances that plutonium from the British civil nuclear programme has been used to make nuclear weapons in the US.

Hesketh claimed that between six and seven tonnes of plutonium from British civil reactors have been exported to the US. He estimates that between two and three tonnes have already been put into warheads and that the remaining plutonium could well be used for weapon manufacture in the future.

His research suggests that at least six of Britain's nine magnox stations have been used to make plutonium for nuclear weapons.

As an added twist to the tangled plutonium story, CND is using an interview with one of the "fathers" of the British nuclear programme and a former CEGB chairman, Lord Hinton, now dead. He claimed that the board had misled the inquiry over the fate of British plutonium.

This point is strongly denied by the board which reiterated this week that it had always relied on government assurances about plutonium deals with the US and any possible military use. □

Cutbacks jeopardise Landsat work

Debora Mackenzie

THE LANDSAT programme, the most advanced project for studying Earth from space, is in turmoil following the continued pressure from the US government for the programme to be self-financing. If the US removes subsidies altogether (a decision has been postponed until after the presidential election in November) then the private companies could pull out altogether and the programme will flounder. And yet if privatisation of Landsat goes ahead, then non-profit making projects which are vital for many Third World countries could end.

The US government, which controls most of the Earth-observation satellites, has tried to encourage the private sector to run them since 1979, when President Carter proposed taking 10 years and $1000 million to shift the Landsat programme to a private company. It argues that remote sensing should pay its own way, or at least that taxpayers should not provide the remote pictures of oil, gas and mineral deposits that benefit companies.

But valuable resources are only part of what Landsat sees. The rest, from marine pollution to the state of world agriculture, is what Livio Marelli of the European Space Agency last week called "the biggest advantage of remote sensing". It is this aspect of remote sensing that some observers at a conference held this week in Paris feel could fall victim to commercialisation.

The Landsat programme suffered a setback in July when the US Office of Management and Budget refused to approve a $500-million subsidy offered by the commerce secretary, Malcolm Baldridge, to the seven companies bidding to take on Landsat—lower than the $1000 million subsidy first suggested. The US congress recessed last week without having decided whether to give the programme a compromise subsidy of $250 million.

As a result of the cut, one of the two leading bidders, Kodak in partnership with Fairchild Corporation, withdrew its bid. The winner by default was Eosat, a joint venture of Hughes Aircraft and RCA. Nevertheless, Eosat said it would have to cut the programme back because of the lower subsidy. As a result, Landsat 6 will be little different from Landsat 5, which is expected to function until 1987. Landsat 6 should be launched in 1988.

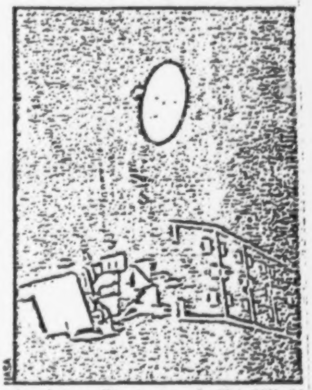
The "value-added" companies, which have an $80-million-a-year business turning raw Landsat data into processed information for individual clients, can cope with a year-long gap between Landsat 6's launch and Landsat 5's demise. If it is any longer, their business is threatened. If Congress still vetoes any Landsat subsidy, then Eosat will not fly any satellites at all. This would throw thousands of scientists and technicians out of work.

Bill Kuipers of Eosat explained last week that "the only way to make remote sensing commercially viable is to increase the current market for its products, and the way to do that is with better sensors providing higher resolution in more spectral bands". However, at the same Paris conference a colleague of Kuipers, Warren Nichols, did admit that Landsat 6 will not be radically different from Landsat 5, because of the cuts i subsidies.

The US government's pressure t commercialise Landsat so that it is sel financing also poses some problems fc Third World countries which use Lands data for non-commercial projects. Lackin the funds generated by commerci ventures, these countries will find it diff cult to pay the high prices demanded b private companies for satellite time.

Nichols said that Landsat 6, if it is buil will phase out the low-density data lin used by Landsat 5's multi-spectral scanne and keep only the high-density band use by its thermatic mapper.

This means that the world's groun stations, few of which are now equipped t receive data from the thermatic mapper will have to spend between $4 million an $10 million each to receive the signal. On problem is that it takes 200-300 megabytes of computer storage to process one thermatic image. The remote sensing centre at the UN's Food and Agriculture Organisation, for instance, currently has only 90 megabytes of store.



Landsat satellite: no room for Third World

Remote sensing users in the Third World could be the losers if, as intended, Spot, France's commercial bid to compete with Landsat, and Eosat start building satellites more in line with the requirements of in the developed world. Tom Ory of Daedalus Corporation, which is building Spot's sensor, sums up the changing attitude towards remote sensing: "The whole game now is to switch science-motivated general satellites to user and economy motivated specialised satellites."

Now, two-thirds of Landsat's work is sold outside the US. Much of this is bought by aid agencies which use it to monitor Third World agriculture, pollution, deforestation, urban growth—a whole range of large events which can be cheaply and effectively monitored from space.

ESA's Marelli said: "We now have a picture of the world evolving under our eyes. If this switches to a campaign to spot particular (financial) targets, we won't." □

ATTACHMENT # 2

Honorable Marylin Lloyd
Rayburn House Office Building
Room 2334
Washington, D.C. 20515

Dear Representative Lloyd:

As union officers representing workers at the Department of Energy's Oak-Ridge, Tennessee Y-12 and X-10 facilities, the Rocky Flats Plant in Golden, Colorado, the National Lead Uranium facility in Fernald, Ohio and the Piketon, Ohio uranium enrichment plant, we are writing to urge your support and co-sponsorship of H.R. 5971. This legislation, introduced by Rep. Tim Wirth, would "transfer to the Secretary of Health and Human Services the authority of the Secretary of Energy to conduct epidemiological studies of the effects of radiation and for other purposes."

The DOE's control over worker health studies is distorting important scientific research and eroding the confidence of DOE contract workers and the general public in the federal nuclear program. We are appalled at efforts by DOE and its contractors to misrepresent scientific findings to working people who unknowingly bear the daily risks of exposure to ionizing radiation and other substances. While we are being reassured by DOE and its contractors that there are no major health problems in the DOE work force, evidence to the contrary has been accumulating since 1974. This behavior clearly results from having the employer direct research which ultimately affects health and safety standards and related compensation. Energy Department research also affects the general public since their studies are used to determine radiation exposure standards for commercial nuclear power and medical applications.

The DOE and its' predecessor, the Atomic Energy Commission (AEC), have been studying the potential long-term effects of exposure to radiation and other substances on DOE contract workers since 1964, when the original contract was given to Dr. Thomas Mancuso of the University of Pittsburgh. In 1977, the DOE severed Mancuso's funds after he and his colleagues reported that the risks of radiation-induced cancer among some 30,000 workers at DOE's Hanford, Washington facility may be 10 to 30 times greater than current occupational exposure standards assume. The decision to fire Mancuso was made in 1974, after he refused to denounce an early study by the Washington State Health Department, which found excess cancer deaths among Hanford workers.

Mancuso's research was given to Battelle Northwest Laboratory (BNL), Oak-Ridge Associated Universities (ORAU) and Los Alamos National Laboratory. A 1978 investigation conducted by the House Commerce Committee on Health and the Environment revealed that Mancuso's study was turned over to researchers who had no substantial experience in occupational cancer epidemiology. The ORAU, BNL and LANL contracts were also issued without peer review and without prerequisite study designs -- standard requirements for research contracts issued by the Department or Health and Human Services. Moreover, the DOE contract officer who helped orchestrate Mancuso's firing left his job to direct the Hanford study for BNL.

In the course of the investigation, Congressmen Paul Rogers and Tim Lee Carter found that the DOE's justifications for firing Mancuso were "not supported" and that the decision to transfer Mancuso's research to "in-house" groups was " highly questionable at best." They concluded that the whole process reflected "serious mismanagement and is of highly questionable legality."

DOE's apparent lack scientific expertise and objectivity hasn't been helped by enthusiastic claims by some of their researchers that there is no association between radiation and disease. In a questionaire to 224 former plutonium workers, LANL researcher Dr. George Voelz stated, "although we do not expect to find any evidence of any sort due to plutonium exposure, we are anxious to prove this is so.....please help us prove that exposures to low-levels of plutonium are not harmful."

In the past few years, DOE contractors have also publically misrepresented exceptional cancer findings at the Rocky Flats facility near Denver, Colorado and the Savannah River Plant, near Aiken, South Carolina. An independent panel convened by Colorado Governor Richard Lamm concluded in the spring of this year that the Rocky Flats Study was released in a way which "suggested that working at Rocky Flats was a particularly healthy activity" when, in fact the study had found a significant excess of brain tumor deaths when compared to the general public. Similar conclusions were reached by a panel of health experts convened by the DOE at the request of the states of South Carolina and Georgia relative to the Savannah River Plant (SRP). It was the unanimous view of this committee that efforts by the DuPont Co., (the operator of the SRP), to erase findings discovered in 1976 of excess lung cancers and leukemias among SRP workers were "inappropriate." Both panels have recommended that these research responsibilites be given to an independent public health agency. Moreover, DOE officials and contractors were aware of the Dupont findings since 1976 and failed to provide this information to a House Science and Technology subcommittee which was reviewing DOE's worker studies in 1982. In late 1983, a study was provided by DOE to a union official at The Oak-Ridge National Laboratory (ORNL) by ORAU on ORNL workers which concluded "there were no consistent trends of cause specific mortality with either external or internal radiation exposure levels." By contrast we have obtained documents generated by DOE epidemiological contractors in April 1982 and May 1984 which paint a much different picture -- one that indicates that serious health problems are occuring at several DOE nuclear facilities including ORNL.

o Workers at the Oak-Ridge National Laboratory, according to an ORAU Project summary, show a 49% excess of leukemia when compared to the general public. The summary states, "leukemia mortality did demonstrate a gradient with increasing radiation dose, but was associated with long-term employment in maintenance and engineering jobs:"

o In a "nested case-control" study of cancer deaths among workers exposed to ionizing radiation at ORNL it was found that "significant excess risk was found for workers in maintenence/construction and janitor/laborer job title groups."

o Data on employees who worked at the Oak-Ridge Y-12 Tennessee Eastman facility between 1943 and 1947 show, "significant excess deaths from lung cancer when compared to U.S. white male rates." A follow-up report states, "relative risk was found to increase with increasing of lung dose even after controlling for age, smoking status and other work place exposures."

o A mortality study of workers at the Y-12 weapons plant operated by Union Carbide Corp., has found "excess deaths for cancer of lung, brain, and CNS [central nervous system], Hodgkin's disease, other lymphatic tissue." Brain tumors among Y-12 workers, was reported by Dr. C.C. Lushbaugh at an "in-house" meeting of DOE researchers to be 100% to over 400% in excess of what's expected in the general public.

o An epidemiologic study of deaths among workers employed at the Oak-Ridge Gaseous Diffusion Plant, demonstrated "excess deaths due to lung and brain cancers and respiratory disease..." Enrichment workers exposed to nickel powder shows "excess deaths from cancers of the buccal cavity and pharynx.."

o At DOE's uranium-processing plant in Fernald, Ohio, ORAU researchers report that "after taking age at diagnosis and age at hire into account there is an association between exposure to uranium and the development of non-malignant respiratory disease..." Futhermore "digestive cancers show a 36% excess..." which was "significant" among wage employees

o A study of 2,529 DOE workers in over 20 facilities who were reported to receive over 5 rems between 1947 and 1978 shows a "significantly elevated" excess for cancer of the rectum--3 times the national average.

Most significantly, the May 1984 ORAU Document states "radiobiologic and epidemiologic evidence suggest these risks may differ" from current studies which underlie radiation standards. The Summary also find that the worker studies also are "a basis for evaluating the efficiency of current radiation protection standards." If this is indeed correct, then research of such importance should not be subject to the conflicting interests that DOE has in nuclear promotion and public health protection.

Workers, who take these risks and who bear the burden of these illnesses should have the right to be fully and adequately informed. DOE's efforts to conceal and mislead the public about radiation risks brings into question the integrity and scientific objectivity of the federal nuclear program.

In the final analysis, manipulation of important occupational health effects research may help the short-term interests of the DOE, but in the long run it can only undermine labor/management relations and public support for a strong national defense. For these reasons we believe that Dr. Mancuso and his research team should be given the funds to continue their studies on other DOE workers. We strongly urge that this problem be acknowledged and rectified by your efforts to make H.R. 5971 a law.

Sincerely,

Robert G. Keil
President
Atomic Trades & Labor Council
Oak-Ridge, Tennessee

Jerry Harden
Jerry Harden
President
United Steel Workers of
America, Local 8031
Rocky Flats, Colorado

Al O'Connor
President
Int'l Association of Machinists
& Aerospace Workers, District 34
Cincinnati, Ohio

D.W. Bloomfield
D.W. Bloomfield
President
Oil, Chemical & Atomic
Workers, Local 3-689
Piketon, Ohio

The CHAIRMAN. Thank you very much.

Senator Domenici.

Senator DOMENICI. Mr. Chairman, I don't have any questions. I would make a couple of observations, if the Chair would permit me to.

The CHAIRMAN. Of course.

Senator DOMENICI. I have had a chance to review some of the testimony, and I would just take issue with a few of them. There is a contention that DOE has consistently refused to comply with the provisions contained in the Resource Conservation and Recovery Acts, so-called RCRA. I don't think that's the case.

The Department of Energy has a memorandum of understanding with the EPA as to how it will operate under RCRA. Furthermore, it is presently in the midst of negotiating with EPA to bring itself in full compliance. These are not inordinate in any way. That's happening everywhere.

Another contention is, people living near DOE facilities are allowed to receive 20 times more radiation exposure than permitted for commercial nuclear powerplants. This is just a very misleading statement. As I understand the facts, while the exposure to regulations differ somewhat from NRC's, they are being brought into compliance. That's the case everywhere as the people move toward one state of rules to another. At all the facilities, only three presently don't meet the NRC standards. Those three are the one that exceed the present NRC standards but are within the DOE standards.

There is another contention that the researchers have found populations subject to excess cancer occurrences. From what I can find, studies such as these have consistently shown that the DOE workers are subject to far fewer cancer frequencies than the normal population. There are some rare cancers that appear to be occurring at a rate which is not clear whether they exceed or are the same as the natural population. There's been a great deal of debate about these. They're not within the normal studies on cancer.

For years, another contention of the witness and the organization, they've been working with citizens groups in six effected States, Texas, Washington, Nevada, Utah, Louisiana, as well as the Indian tribes, to convince DOE to revise regulations, the guidelines. But DOE has rejected, the statement is, all these parties' concerns.

I have asked the staff about that, and they have determined that of the 13 major issues which were highlighted as to proposed guidelines, 7 of them were principally set forth by State. In each of those instances, DOE responded and modified its proposed guideline. Furthermore, in the NRC concurrence process on these guidelines seven additional changes were made which DOE has incorporated. The NRC then approved the guidelines by a 5 to 0 vote.

The EPI appears to be pushing for site-specific guidelines, when we intended in the act that DOE prepare general guidelines, as I understand it, for site selection. How can the DOE propose site-specific guidelines when they have not even explored the site in any detail.

There are a number of others. I just didn't want to let the record go without any observations on my part.

I would also ask, Mr. Chairman, that a recent, January 29 article in the Washington Post with reference to DOE facing off with a major contractor, duPont, over an employee who contended on a major contract that the contractor wasn't following occupational and safety standards as required.

This article would clearly indicate that DOE is out in front in the private sector. They are about to close down that project if duPont doesn't agree to reinstate the man that made the complaints, because they found him right. The article leaves me with the implication that, with reference to occupational health and safety standards, that they're pretty tough. Some of those are vague and difficult, but it looks to me like on one of the major ones in the country where there is construction going on, that this article would indicate that they're pushing very hard for compliance.

I would ask that at the conclusion of my remarks, for the record, that that summary of the duPont confrontation be made a part of the record.

The **Chairman**. It will be made a part of the record.

Senator **Domenici**. Thank you, Mr. Chairman.

[The article follows:]

[From the Washington Post, Jan. 29, 1985]

DOE Faces Off With Major Contractor

EMPLOYE'S FIRING PROMPTS SHOWDOWN AT NUCLEAR WEAPONS PLANT

(By Cass Peterson)

When plumber Pepe J. Mestres moved from New York to South Carolina in 1982, he was looking for little more than steady work. The Savannah River nuclear weapons plant, with its miles of pipes and valves, looked like a safe bet.

But Mestres doesn't work there anymore. He was fired, according to a Department of Energy investigation, because he took too keen an interest in safety on the job.

Now DOE officials are eyeball to eyeball with their Savannah River contractor, E.I. du Pont de Nemours & Co., over whether Mestres must be rehired or provided other "appropriate relief," or whether the department must play its only trump card: a stop-work order that could bar B.F. Shaw Co., a major Du Pont subcontractor and Mestres' former employer, from the weapons facility's 300-acre complex outside Aiken, SC.

If Du Pont were to agree to our position and B.F. Shaw did not agree, a stop-work is a possibility," said Cliff Webb, a DOE spokesman at Savannah River.

But if the idea of barring an important subcontractor in the midst of a frenetic construction schedule is distasteful to DOE officials, the prospect that Du Pont also might refuse to comply with their order is even more nettlesome. According to safety officials, the department's only administrative option would be to sever its 30-year relationship with Du Pont at Savannah River.

"There are contractural obligations," said Bill Thornton of DOE's occupational safety office at Savannah River. "There are grounds for a contract being reviewed and terminated. It's never been done for a large contractor."

Du Pont has until today to respond to DOE's Jan. 7 ruling in favor of Mestres, and department officials say they are hopeful that a settlement will be reached short of the unthinkable.

"I can't visualize them not obeying the order," said Donald M. Ross, a DOE occupational safety official here. "We've never had an instance where we haven't gotten our way."

Du Pont officials directed a reporter's phone calls back to the DOE public affairs office.

Some Energy officials acknowledge that they are puzzled by the apparent reluctance of both Du Pont and B.F. Shaw to rehire Mestres, who was described in the DOE ruling as "an average to a good employe who was apparently well regarded by supervisors and fellow employes."

Mestres is less puzzled. "There is a point to be proved," he said in an interview last week. "Companies can see that DOE decided in my favor. It's like a victory to us. They can't treat us this way and get away with it."

Mestres lost his job on March 28, 1984, after repeated confrontations with his superiors over what he saw as lax safety practices and the lack of protective equipment. His case reached DOE headquarters last fall, under a 1983 regulatory change that for the first time allowed such appeals, and on Jan. 7 a special appeals board took his side.

The three-member panel rejected arguments that Mestres was fired for poor performance, finding that his "repeated inquiries and discussions of valid safety concerns . . . would appear to be the real reason for his termination."

Mestres, the report said, "tended to be very assertive where his rights or his safety were concerned. . . . B.F. Shaw management was clearly concerned about this and seemed uncertain about how to handle Mr. Mestres and considered him a problem employe."

The investigators found that Mestres did his assigned work, despite his safety concerns. But they added that "B.F. Shaw Co. policy—'If you think it is not safe, don't do it'—rings hollow in the face of [a foreman's] warning—'If you don't do it, that's insubordination.' "

In one case, according to the DOE report, Mestres steam-cleaned bearings without the required protective equipment after a foreman rejected his request for protective gear by saying "go on and do your work, Safety is not here tonight."

In another case, Mestres was burned "fairly seriously" after being assigned to overhead cut-and-burn work without being issued proper protective equipment.

In still another case, Mestres' complaints about defective brakes on a forklift were dismissed by a foreman who stated that "it's no pipefitter's responsibility to know whether that machine is unsafe or not. . . . All this is for the driver himself." Questioned about a later incident in which Mestres developed a hernia after manually lifting a 300-pound canister, the same foreman responded that "this man was assigned to a forklift."

According to Mestres, his troubles began when he was transferred out of a "hot" work area—one involving exposure to radiation—to a "clean" area. The transfer was ordered because of tests that showed Mestres suffered from polycythemia, an excess of red blood cells.

Exposure to radiation is suspected of causing or exacerbating some forms of polycythemia, although the condition also can have other causes, including living at a high altitude or smoking. In Mesres' case, the condition apparently predated his work at Savannah River—it showed up on his prehiring health tests.

Mestres said he wasn't informed of it then, and he has yet to learn why he was cleared initially for a radiation zone, or why the clearance was lifted. The DOE report attributes the situation to "a lack of communication," but Mestres notes that the change came shortly after the Atlanta Constitution ran a series on high rates of polycythemia in the Savannah River area and the federal Centers for Disease Control agreed to look into the situation.

Mestres said he believed that some of his trobules stemmed from the fact that he was considered an "outsider"—a New Yorker of Cuban ancestry—but he also believes that the transfer may have triggered resentment.

"Around here, they say, 'You don't want to work radiation, then we don't need you. Goodbye,' " he said.

Still, Mestres, who has five children, said that he would rather have his job back than a financial settlement. "A lot of people won't work out there, because they feel no one really knows about radiation." he said. "People who are hard up like me, I got to feed the family."

"Am I concerned about my health? Yeah," he said. "DOE knows I'm concerned about that issue."

His wife, Susan, agrees. "If he does go back, maybe things will change," she said, "Now he knows it's not a matter of 'do it or else.' He knows now he can go to DOE."

The **Chairman**. Let me observe, at the conclusion, that whether or not the points that you have made are supported by evidence, they are substantial points. We must satisfy ourselves concerning those points.

One in particular, which I would like to highlight, is the separation between civilian and nuclear programs. I think it is an important one for a variety of reasons, and therefore I will share with you a determination that that separation be maintained.

However, I would be careful to note that the loaning of plutonium for research operations from defense stockpiles is a 40-year-old practice that has great operating efficiencies and great economies, and has been honored by observants for many, many years. I'm not certain that the separation requires that that practice be eliminated.

We have to be careful when we look at those to determine whether we are seeing a change of policy, or an existing policy that is being violated. I think in this instance, based upon the information that I have, we don't have as yet clear evidence that there is violation of policy. But I will guarantee you that is something I am interested in, and I will look at it.

Mr. ALVAREZ. Well, if I may add, Senator——

The CHAIRMAN. Surely.

Mr. ALVAREZ [continuing]. That indeed some of this plutonium has been sent from the military program. But as I pointed out in my testimony, 4 tons of this plutonium has been generated by civilian commercial nuclear powerplants in Great Britain as part of a barter agreement, and that there appears to be a contradictory public record about this matter insofar as that in discussion of this matter before the House Energy and Commerce Committee last year, Secretary Hodel made it abundantly clear that the DOE is not going to foreclose the option of using this plutonium at a later date to manufacture nuclear weapons.

However, the Defense Minister of Great Britain in the inquiries to the Parliament has said that he has reassurances that the DOE—or that the U.S. Government will not do this. Now this matter has been subject to some public discussion. If you notice in my testimony, I made it clear that the 4 tons of plutonium from the British program is the stuff that should be fenced off, and not the plutonium that's been loaned from the U.S. military program.

The CHAIRMAN. But again, if you follow the thread of ownership and possession of that plutonium, it was transferred to the United States for defense stocks, then loaned from defense stocks to research programs.

Mr. ALVAREZ. Well, in examining the record, sir, the statement before—Lord Hume before the British Parliament in 1964 when that occurred, said it was for peaceful purposes.

The CHAIRMAN. What?

Mr. ALVAREZ. When Lord Hume made this presentation to the British Parliament in 1964, he stated explicitly it was for peaceful purposes.

The CHAIRMAN. I haven't looked at his statement before the British Parliament. I have looked at our own documents with respect to that.

Mr. ALVAREZ. But I guess I raised the issue, whether or not it's a matter of formal policy and whether this formal policy is being violated. I think the times have changed, and that in particular India can use the same arguments that we have used in terms of exploding a nuclear device, because it was from a civilian program where these distinctions were blurred.

I raised this issue because this is going to be a matter that will be discussed and will probably be brought up in the nonproliferation review treaty conference.

The CHAIRMAN. I think there is no question that the issue will be discussed, and I for one will continue to attempt to maintain a separation between the civilian and the military uses of plutonium and the industries that support them. I just don't want the record to overstate what may be the fact today with respect to the use of plutonium from defense stocks for research purposes and research activities, and the FFTF is a research reactor. It's not a production reactor, and therefore falls within that definition of time-honored usage.

There is no change of policy implied by that loaning from defense stocks.

I have no further questions. I see no other members of the committee here who might have questions. We have had no other requests for appearances before the committee. Therefore, we will conclude this hearing.

Thank you.

Mr. ALVAREZ. Thank you.

Mr. McDONALD. Thank you.

[Whereupon, at 1:20 p.m., the hearing was adjourned.]

APPENDIXES

APPENDIX I

Biography and Informational Statement of John S. Herrington

THE WHITE HOUSE
WASHINGTON

THE HONORABLE
JOHN S. HERRINGTON

Mr. Herrington was born in Los Angeles, California on May 31, 1939 and graduated from University High School, Los Angeles, California in 1957. He is a graduate of Stanford University where he received his A.B. degree in Economics in 1961. At Stanford, he played varsity rugby, soccer, and boxed. Mr. Herrington received his LL.B. and J.D. degrees at the University of California, Hastings College of Law, San Francisco, in 1964. Mr. Herrington has been a practicing attorney in California since 1965 where he had a varied law practice ranging from criminal prosecution with the Ventura County District Attorney's office to corporate and real estate law. He also expanded his interests into real estate development, ranching, and other investment undertakings. Mr. Herrington moved to Washington, D.C. in January, 1981 to become Deputy Assistant to the President, Director of Presidential Personnel. On September 14, 1981, he was nominated by President Reagan to be Assistant Secretary of the Navy (Manpower and Reserve Affairs). Mr. Herrington was confirmed by the Senate on September 25, 1981, and sworn into office on October 5, 1981. He served in the Navy Department until February 19, 1983 when he resigned to take the position of Special Assistant to the Chief of Staff at the White House. For his work in the Navy Department, he was awarded the Department of Defense Distinguished Service Medal. On May 17, 1983 Mr. Herrington was promoted to his current post as Assistant to the President for Presidential Personnel.

Mr. Herrington served as a First Lieutenant in the United States Marine Corps. He was a member of the Reserve Forces Policy Board, the Department of the Navy Review and Oversight Council, the President's Military Manpower Task Force Working Group, and the Defense Department Per Diem Committee. He is also a member of the United States Naval Institute, the National Naval Officer Association, the Navy League, Marine Corps Reserve Officer's Association, the Naval Enlisted Reserve Association, Fleet Reserve Association, and the Tailhook Association.

Mr. Herrington is married to the former Lois Haight of San Francisco. Mrs. Herrington is currently serving as an Assistant Attorney General. In 1981 she was appointed by President Reagan as Chairman of the President's Task Force on Victims of Crime. Prior to their move to Washington, D.C., she served as a senior prosecuting attorney in the Alameda County District Attorney's office in Oakland, California. They have two daughters, Lisa Marie (age 17), and Victoria Jean (age 16) currently attending public high school in McLean, Virginia where they reside.

44-546 O—85——5

UNITED STATES SENATE
COMMITTEE ON ENERGY AND NATURAL RESOURCES

STATEMENT FOR COMPLETION BY PRESIDENTIAL NOMINEES

Name: HERRINGTON (LAST) JOHN (FIRST) STEWART (OTHER)

Position to which nominated: SECRETARY, DEPARTMENT OF ENERGY

Date of nomination: 1/18/85

Date of birth: 31 (DAY) 5 (MONTH) 39 (YEAR)

Place of birth: LOS ANGELES, CALIFORNIA

Marital status: MARRIED

Full name of spouse: LOIS HAIGHT HERRINGTON

Name and ages of children: LISA MARIE 17
VICTORIA JEAN 16

Education:

Institution	Dates attended	Degrees received	Dates of degrees
UNIVERSITY HIGH SCHOOL LOS ANGELES, CA	1953-1957	COLLEGE PREPARATORY	1957
STANFORD UNIVERSITY	1957-1961	AB-ECONOMICS	1961
HASTINGS COLLEGE OF LAW UNIVERSITY OF CALIFORNIA	1961-1964	LL.B AND JD	1964

Employment record: List below all positions held since college, including the title and description of job, name of employer, location, and dates.

5/16/83-PRESENT	THE PRESIDENT	WHITE HOUSE	ASST. TO THE PRESIDENT, PRESIDENTIAL PERSONNEL OFFICE
2/20/83-5/15/83	THE PRESIDENT	WHITE HOUSE	SPECIAL ASST. TO THE CHIEF OF STAFF
10/05/81-2/19/83	SEC. OF THE NAVY JOHN LEHMAN	PENTAGON	ASST. SECRETARY OF THE NAVY (MANPOWER & RESERVE AFFAIRS)
3/02/81-10/04/81	ASST. TO THE PRESIDENT-P. JAMES	WHITE HOUSE	DEPUTY ASST. TO THE PRESIDENT $ DIRECTOR PRESIDENTIAL PERSONNEL OFFICE
1966-1981	SELF-EMPLOYED LAW FIRM OF JOHN S. HERRINGTON	900 SOUTH BROADWAY WALNUT CREEK, CA	GENERAL LAW PRACTICE (SOLE PRACTITIONER)
10/65-2/66	DISTRICT ATTY'S OFFICE	COURT HOUSE VENTURA CTY. CA	DEPUTY DISTRICT ATTORNEY
10/64-3/65	HESSION, ROBB, CREEDON & KELLEY	SAN MATEO, CA	RESEARCHER FOR LAW FIRM

Employment record—Continued

Military service: Enter all military service if not included above: service, dates, rank, type of discharge.

U.S. MARINE CORPS, ACTIVE DUTY JUNE-AUGUST, 1962 (PLC-LAW); COMMISSIONED AS A SECOND LIEUTENANT UPON COMPLETION OF PLATOON LEADERS CLASS IN AUGUST 1962.

TRANSFERRED TO THE RETIRED RESERVES EFFECTIVE APRIL 1, 1965. (RETIRED RESERVE IDENTIFICATION CARD ISSUED MAY 2, 1966.)

Honors and awards: List below all scholarships, fellowships, honorary degrees, military medals, honorary society memberships, and any other special recognitions for outstanding service or achievement.

DEPARTMENT OF DEFENSE DISTINGUISHED SERVICE MEDAL (FEBRUARY 1983)

Memberships: List below all memberships and offices held in professional, fraternal, business, scholarly, civic, charitable and other organizations.

Organization	Office held (if any)	Dates
UNITED STATES NAVAL INSTITUTE	NONE	1983-PRESENT
CALIFORNIA BAR ASSOCIATION	NONE	1964-PRESENT
HASTINGS ALUMNI ASSOCIATION	NONE	1964-PRESENT
STANFORD ALUMNI ASSOCIATION	NONE	1961-PRESENT

Published writings: List the titles, publishers and dates of any books, articles, or reports you have written.

NONE

Qualifications: State fully your qualifications to serve in the position to which you have been named. (attach sheet)

Future employment relationships:

1. Indicate whether you will sever all connections with your present employer, business firm, association or organization if you are confirmed by the Senate.

YES

2. As far as can be foreseen, state whether you have any plans after completing government service to resume employment, affiliation or practice with your current or any previous employer, business firm, association or organization.

NO

3. Has anybody made you a commitment to a job after you leave government?

NO

4. (a) If you have been appointed for a fixed term, do you expect to serve the full term?

N/A

(b) If you have been appointed for an indefinite term, do you have any known limitations on your willingness or ability to serve for the foreseeable future?

NO

al conflicts
interest:

1. Describe any financial arrangements or deferred compensation agreements or other continuing dealings with business associates, clients or customers who will be affected by policies which you will influence in the position to which you have been nominated.

NONE

2. List any investments, obligations, liabilities, or other relationships which might involve potential conflicts of interest with the position to which you have been nominated.

I OWN A 1/12 INTEREST IN ARCO ROYALTIES FROM OIL POOL LEASES UNDER 405 LONG BEACH BOULEVARD AND 350 PINE STREET, LONG BEACH, CALIFORNIA, AND A 1/12 INTEREST IN EXXON ROYALTIES FROM A COMMUNITY OIL AND GAS LEASE UNDER 212 WEST ANAHEIM STREET, WILMINGTON, CALIFORNIA. THE ROYALTY INCOME FROM THESE LEASES HAS NOT EXCEEDED $3,000 IN ANY YEAR.

JOHN S. HERRINGTON
STATEMENT OF QUALIFICATIONS

After receiving my law degree from Hastings College of Law in 1964, I became Deputy District Attorney for Ventura County, California. In 1966 I opened my own law office in Walnut Creek, California specializing in business and corporate law. In addition to my law practice, I extended into ranching, real estate development and management. As president and general manager of these business endeavors, I maintained responsibility for management and administration.

In March 1981 I came to Washington to serve on the White House staff as Deputy Assistant to the President and Director of Presidential Personnel.

Between November 1981 and February 1983, I served as the Assistant Secretary of the Navy (Manpower and Reserve Affairs). My responsibilities included all policy formulation and administration of affairs related to military, civilian and reserve personnel such as:

* Principal policy advisor to the Secretary of Defense on all matters regarding Naval Reserve components.

* Acquisition, utilization, maintenance and disposal of Naval real estate and facilities.

* All Naval printing and publications.

* All transportation matters.

* All labor relations regarding Naval contractors.

Additionally, I was assigned the oversight responsibility for a number of boards and councils having significant impact on many personnel policies and procedures. These boards and councils included:

* Reserve Forces Policy Board

* Department of the Navy Review and Oversight Council

* President's Military Manpower Task Force Working Group

* Department of Defense Per Diem Committee

Another aspect of my position was to serve as a Department of the Navy representative and liaison to civilian support groups, for example:

- National Naval Officers Association
- Fleet Reserve Association
- United States Naval Institute
- Marine Corps Reserve Officers Association
- Naval Enlisted Reserve Association
- Navy League
- Tailhook Association

I was the administrator for the military, civilian and reserve contingent of approximately 1,247,000 persons with an estimated annual operating budget of $26 billion. In February 1983 I was awarded the Distinguished Service Medal by the Department of Defense.

The President in May 1983 asked me to serve as Assistant to the President for Presidential Personnel. In this position I have personally been involved in the research, interview, consultation and recommendation stages of all non-career appointments to administrative posts throughout the federal government, including the Departments of Energy and Interior, Federal Energy Regulatory Commission, Nuclear Regulatory Commission, Environmental Protection Agency and Council on Environmental Quality. I have been responsible for the recommendation of numerous members to executive branch boards and commissions which have advisory oversight responsibility on a broad scope of energy-related issues.

3. Describe any business relationship, dealing or financial transaction (other than taxpaying) which you have had during the last 10 years with the Federal Government, whether for yourself or relatives, on behalf of a client, or acting as an agent, that might in any way constitute or result in a possible conflict of interest with the position to which you have been nominated.

NONE

4. List and describe any lobbying activity during the past 10 years in which you have engaged for the purpose of directly or indirectly influencing the passage, defeat or modification of any legislation at the national level of government or for the purpose of affecting the administration and execution of national law or public policy.

NONE

5. Explain how you will resolve any potential conflict of interest that may be disclosed by your responses to the above items.

UPON CONFIRMATION BY THE SENATE, I WILL TRANSFER ALL OF MY RIGHT, TITLE AND INTEREST IN THE LEASES REFERRED TO IN QUESTION 2 ABOVE TO MY MOTHER.

6. Explain how you will comply with conflict of interest laws and regulations applicable to the position for which you have been nominated. Attach a statement from the appropriate agency official indicating what those laws and regulations are and how you will comply with them.

I WILL CONTINUE TO SEEK AND COMPLY WITH THE ADVICE OF THE DESIGNATED AGENCY ETHICS OFFICIAL AT THE DEPARTMENT OF ENERGY.

Department of Energy
Washington, D.C. 20585

JAN 25 1985

Mr. John Stewart Herrington
1104 Waverly Way
McLean, Virginia 22101

Dear Mr. Herrington:

This letter is intended to serve as a statement from the designated agency ethics official of this Department, as required by question 6 (page 5) of the Statement for Completion by Presidential Nominees that you will be submitting to the United States Senate Committee on Energy and Natural Resources in connection with your nomination for the position of Secretary of Energy. I have reviewed your Standard Form 278 (Financial Disclosure Report) and your Form DOE-460 (Report on Prior Employment), dated January 15, and January 18, 1985, respectively, and have certified that the information contained therein discloses no conflict of interest under applicable laws and regulations, except as discussed below.

As a supervisory employee of the Department, you will be prohibited by section 602(a) of the Department of Energy (DOE) Organization Act (Pub. L. 95-91) from knowingly receiving compensation from, holding any official relation with, or having any pecuniary interest in any energy concern. The term "energy concern" is defined in section 601(b) of the Act as any entity "significantly engaged in the business" of any of a variety of activities related to energy production, distribution, sale, or research and development, or any entity significantly engaged in such research and development pursuant to a DOE-funded program irrespective of whether it pursues such activity as a profit-making venture. The term also includes any entity holding an interest in property from which an energy resource is commercially produced or obtained.

In addition, section 208(a), title 18, United States Code, makes it a criminal offense for you to participate personally and substantially, as a Government employee, in any particular matter in which you have (or your spouse, minor child, partner, organization in which you are serving as officer, director, trustee, partner, or employee, or any person or organization with whom you are negotiating or have any arrangement concerning prospective employment has) a financial interest. Accordingly, you should avoid participation in any particular matter the outcome of which could have a direct and predictable effect on any such financial interests.

You listed in Schedule A of your Standard Form 278 a 1/12th interest in ARCO royalties from oil pool leases under 350 Pine Street and 405 Long Beach Boulevard, Long Beach, California, and a 1/12 interest in Exxon royalties from a community oil and gas lease under 212 West Anaheim Street, Wilmington, California. I understand that, upon confirmation by the Senate, you will convey these interests to your mother, who you believe presently has a 10/12th interest in such royalties. [1] I further understand that the remaining 1/12th interest in the royalties belongs to your brother, who is a partner with you in certain real estate ventures. Because your brother is your partner, you are subject to the restrictions of 18 U.S.C. 208(a) with respect to those of his financial interests of which you have knowledge. However, section 208(b)(1) authorizes waiver of this prohibition with respect to a particular interest. We have been informed by the Office of the Counsel to the President that you will request such a waiver with respect to your brother's interests in the royalties in question.

Finally, with respect to prior employment, section 606(a) of the DOE Organization Act prohibits a supervisory employee, for a period of one year after terminating any employment with any energy concern, from knowingly participating in any Department proceeding [2] in which his former employer is substantially, directly, or materially involved, other than in a rulemaking proceeding which has a substantial effect on numerous energy concerns. Since you were not employed by any energy concern during the past year, this restriction will not apply to your service in the Department.

Section 606(b) of the Act prohibits a supervisory employee, for a period of one year after commencing service in the Department, from knowingly participating in any Department proceeding for which he had direct responsibility, or in which he participated substantially and personally, while in the employment of any energy concern within the previous five calendar years. The prior employment described in your Form DOE-460 does not suggest to me any Department proceeding from which section 606(b) would

---

1/ I also understand that, in accordance with White House policy, you also plan to resign your position as officer and director of Century Management Company (listed in Schedule D of your Form 278), a real estate business in which you also have an ownership interest.

2/ The term "Department proceeding" is defined in section 1010.103(h) of DOE's Conduct of Employees regulations as "any judicial proceeding, Department hearing, application, rulemaking, order, license, contract, grant, award, fund transfer, claim, controversy, charge, accusation, or arrest, in which the Department is directly involved."

require your disqualification during your first year in the Department.

Please let me know if I can be of further assistance.

Sincerely,

Ralph D. Goldenberg

Ralph D. Goldenberg
Assistant General Counsel
for General Law

Financial statement:

1. Attach a copy of your Executive Personnel Financial Disclosure Report (SF 278).

2. List sources, amounts and dates of all anticipated receipts from deferred income arrangements, stock options, uncompleted contracts and other future benefits which you expect to derive from previous business relationships, professional services and firm memberships or from former employers, clients, and customers. Amounts should be indicated by the categories established for reporting income on Form SF 278, Schedule A.

NONE

3. Are any assets pledged? (Add schedule.)

SEE ATTACHMENT A

4. Are you currently a party to any legal action?

LAWSUIT PENDING IN SAN FRANCISCO FEDERAL COURT INSTITUTED BY MY BROTHER AND ME IN JUNE, 1980 FOR INVERSE CONDEMNATION AGAINST THE COUNTY OF SONOMA, CALIFORNIA REGARDING THE ZONING OF RANCH LAND WE OWN.

5. Have you ever declared bankruptcy?

NO

6. Have you filed a Federal income tax return for each of the last 10 years? If not, please explain.

YES

7. Has the Internal Revenue Service ever audited your Federal tax return? If so, what resulted from the audit?

NO

United States of America
**Office of
Government Ethics**

Office of Personnel Management
Washington, D.C. 20415

JAN 29 1985

Honorable James A. McClure
Chairman, Committee on Energy and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

In accordance with the Ethics in Government Act of 1978, I enclose a copy of the financial disclosure report filed by John S. Herrington, who has been nominated by President Reagan for the position of Secretary of the Department of Energy.

We have reviewed the report and have also obtained advice from the Department of Energy concerning any possible conflict in light of the Department's functions and the nominee's proposed duties. The report discloses financial interests in certain oil royalties. The Department of Energy has advised in its letter to this Office of January 25, 1985 (also enclosed) that Mr. Herrington, upon confirmation by the Senate, will convey these interests to his mother. In addition, Mr. Herrington has indicated that he will request a waiver under subsection (b)(1) of 18 U.S.C. §208 with respect to his brother's 1/12th interest in these royalties: his brother's interest is attributed to Mr. Herrington under subsection (a) of that provision, because they are partners in certain real estate ventures. Mr. Herrington will also resign his position as officer and director of Century Management Company, in accordance with White House policy.

Subject to these commitments and the grant of the waiver, we believe that Mr. Herrington will be in compliance with applicable laws and regulations governing conflicts of interest.

Sincerely,

David H Mart
David H. Martin
Director

Enclosures

Department of Energy
Washington, D.C. 20585

JAN 25 1985

David H. Martin, Director
Office of Government Ethics
1717 H Street, N.W.
Washington, D.C. 20415

Dear Mr. Martin:

This letter transmits to you, in accordance with 5 C.F.R. § 734.604(c)(2)(iii), a copy of the Standard Form 278 submitted by John Stewart Herrington, incident to his nomination to the position of Secretary of Energy. A position description is attached to the form.

Section 602(a) of the Department of Energy Organization Act (Pub. L. 95-91) prohibits Mr. Herrington from having any official relationship with or financial interest in any energy concern. In addition, section 606 of the Department of Energy Organization Act prohibits Mr. Herrington, during his first year with the Department, from participating in certain Department proceedings involving energy concerns for whom he has performed employment services, if any, since January 1, 1980. Since he has not performed services for any such concern during the previous five calendar years, the restrictions of section 606 will not apply to his service in the Department.

Mr. Herrington listed on Schedule A of his Standard Form 278 a 1/12th interest in ARCO royalties from oil pool leases under 350 Pine Street and 405 Long Beach Boulevard, Long Beach, California, and a 1/12 interest in EXXON royalties from a community oil and gas lease under 212 West Anaheim Street, Wilmington, California. Mr. Herrington has agreed that, upon confirmation by the Senate, he will convey these interests to his mother, who he believes presently has a 10/12th interest in such royalties.[1] The remaining 1/12th interest in the royalties belongs to his brother, who is a partner with him in certain real estate ventures. We have been informed by the Office of the Counsel to the President that Mr. Herrington will request a waiver under section 208(b)(1) with respect to his brother's royalty interests to the extent that such an interest is a financial interest within the meaning of section 208(a). Mr. Herrington will be given advice to assure his compliance with the prohibitions of section 208, title 18, United States Code, concerning his other financial interests.

---

[1] In accordance with White House policy, he will also resign his position as officer and director of Century Management Company (listed in Schedule D of his Form 278), a real estate business in which he also has an ownership interest.

This letter is intended to be annexed to the "comments" section of Mr. Herrington's Standard Form 278. Except for the matters discussed above, I encountered no problems in reaching the conclusions upon which my certification on the form is based.

Sincerely,

Ralph D. Goldenberg

Ralph D. Goldenberg
Assistant General Counsel
for General Law

Enclosures

1. Mr. Herrington's SF 278
2. Position Description

Office of Personnel Management

FINANCIAL DISCLOSURE REPORT

Form Approved OMB No. 3209-0002

Page 1

Reporting Status (Check Appropriate Box)
☐ Incumbent ☒ New Entrant, Nominee, or Candidate ☐ Termination Report

NOTE
All schedules must be filed. Enter "None" in areas or across schedules where appropriate

Agency Use Only — Date of Filing (Month, Day, Year): JAN 18 1985

OGE Use Only

Reporting Individual's Name
Last Name: HERRINGTON
First Name and Middle Initial: JOHN STEWART

Position for Which Filing
Title of Position: SECRETARY
Department or Agency (If Applicable): DEPARTMENT OF ENERGY
Date of Appointment, Candidacy, Election or Nomination (Mo., Day, Yr.):
Termination Date (If Applicable) (Month, Day, Year):

Location of Present Office
Address (Number, Street, City, State and Zip Code): THE WHITE HOUSE-WEST WING, SECOND FLOOR-WASHINGTON, D.C. 20500
Room Number: WEST WING, SECOND FLOOR
Telephone No. (Include Area Code): (202) 456-2335

Presidential Nominees Subject to Senate Confirmation
Name of Congressional Committee Considering Nomination: ENERGY AND NATURAL RESOURCES
Do You Intend to Create a Qualified Diversified Trust? ☐ Yes ☒ No

Position(s) Held With the Federal Government During the Preceding 12 Months (If Not Same as Above)
Title of Position(s) and Date(s) Held: ASSISTANT TO THE PRESIDENT FOR PRESIDENTIAL PERSONNEL

Certification
I CERTIFY that the statements I have made on this form and all attached schedules are true, complete and correct to the best of my knowledge and belief.
Signature of Reporting Individual: John S. Herrington
Date (Month, Day, Year): 1/15/85

Agency Ethics Official's Opinion
The information contained in this report discloses no conflict of interest under applicable laws and regulations.
Signature of Designated Agency Ethics Official/Reviewing Official:
Date (Month, Day, Year): 1/25/85

Office of Government Ethics Use Only
Signature:
Date (Month, Day, Year):

Comments of Reviewing Officials (If additional space is required, use the reverse side of this sheet)

Mr. Herrington has agreed that, upon confirmation by the Senate, he will convey his interests in ARCO and EXXON royalties (listed on page 3) to his mother. He will also request a waiver, pursuant to 18 U.S.C. 208(b)(1) with respect to his brother's interests in those royalties (his brother is a partner with him in certain real estate ventures). See my attached letter of today's date to the Director, Office of Government Ethics. 1/25/85

(Check box if comments are continued on the reverse side) ☐

SF 278 (Rev. …) · 278-107 · NSN 7540-01-070-8444

INCOME AND INTERESTS IN PROPERTY

[illegible]

	Yes	No
Did you, your spouse, or dependent child receive income from or have a beneficial interest in a trust?	X	
If "yes", have you reported the income from the trust?	X	
If "yes", have you reported the assets of the trust?	X	
If "yes" is this trust an "excepted" trust? [Yes ☐ No X] or "qualified" trust?		X

	Yes	No
Are there any other items (property, purchases, sales or exchanges, or liabilities) of a spouse or dependent child which you have not reported?		X
If Yes, do you certify to all of the following? 1 They represent solely your spouse's or dependent child's financial interest or responsibility. 2 They are not in any way, past or present, derived from your income, assets, or activities. 3 You neither derive, nor expect to derive, any financial or economic benefit from them, and 4 You do not have knowledge as to the composition of such interest or liabilities		

Page Number 2

Schedule A

Reporting Individual's Name

JOHN S. HERRINGTON

Agency Use Only

Date of Filing (Month, Day, Year)

JAN 18 1985

Spouse (S) or Dependent Child (DC)	Identification	Income																		Interests in Property						
		Type of Income (✓)							Category of Amount or Value (✓)											Valuation of Assets (✓)						
		Dividends	Rent *	Interest	Capital Gains	Excepted Trust	Qualified Trust	Other (Specify)	None (or less than $101)	$101-$1,000	$1,001-$2,500	$2,501-$5,000	$5,001-$15,000	$15,001-$50,000	$50,001-$100,000	Over $100,000	Actual Amount Only if "Other" Specified	Date (Mo., Day, Yr.) Only if Honoraria	Valuation Method	$1,001-$5,000	$5,001-$15,000	$15,001-$50,000	$50,001-$100,000	$100,001-$250,000	Over $250,000
	Commercial Building ** 800 South Broadway, Walnut Creek		X	(**Owned through Broadway) Associates												X			A						X
	Single Family Residence: 1700 Bohemian Highway, Occidental, Ca.		X										X						A						X
	Commercial Bldg.: 850 S. Broadway Walnut Creek, Calif.		X												X				A						X
	Commercial Bldg.: 900 S. Broadway Walnut Creek, Calif.		X												X				A						X
	Commercial Bldg.:405 Long Beach Blvd. Long Beach, Ca.-1/12 interest		X										X						A			X			
	Commercial Bldg.: 350 Pine St., Long Beach, Ca.-1/12 interest		X								X								A			X			
	Single Family Residence: 3203 N Main Street, Pleasant Hill, Ca.		X									X							A				X		
	Single Family Residence: 1041 Esther Drive, Pleasant Hill, Ca.		X									X							A				X		
	Single Family Residence: 1043 Esther Drive, Pleasant Hill, Ca.		X									X							A				X		
	Single Family Residence: 101 Cliff Lane 1/3 interest, Walnut Creek, Ca. w/2 indiv.		X									X							A				X		
	Single Family Residence:160 Alderwood Walnut Creek, Ca.		X										X						A						X
	Single Family Residence: Unit 109 Tahoe Tavern, Tahoe City, Ca.		X											X					A						X
	NOTE AND DEED OF TRUST SECURED BY (From John Hagen, Walnut Creek, CA.) 1021 ESTHER DRIVE, PLEASANT HILL, CA			X								X							Note paid in full 10/84						
	NOTE AND DEED OF TRUST SECURED BY (From Charles McKinney, Walnut Creek, CA.) 3227 NORTH MAIN, PLEASANT HILL, CA			X								X							H			X			

* NOTE: Amounts reported are gross figures.

Page Number ➤ 3	Schedule A
Reporting Individual's Name	JOHN S. HERRINGTON
Agency Use Only	
Date of Filing (Month, Day, Year)	JAN 18 1985

	Yes	No
Do you, your spouse, or dependent child receive income from, or have a beneficial interest in a trust?		
If "yes", have you reported the income from the trust?		
If "yes", have you reported the assets of the trust?		
If "yes", is this trust an "excepted" trust? ☐ Yes ☐ No or "qualified" trust?		

	Yes	No
[illegible] or liabilities of a spouse [illegible] reported?		
If "Yes" [illegible] of the following: 1 They represent solely your spouse's or dependent child's financial interest or responsibility; 2 They are not in any way paid or derived from your income, assets, or activities; 3 You neither derive, nor expect to derive, any financial or economic benefit from them; and 4 You do not have knowledge as to the composition of such interest or liabilities.		

		Income																Interests in Property						
		Type of Income (✓)							Category of Amount or Value (✓)										Valuation of Assets (✓)						
Spouse (S) or Dependent Child (DC)	Identification RBY 1/25/85	Dividends	Rent	Interest	Capital Gains	Excepted Trust	Qualified Trust	Other (Specify)	None (or less than $101)	$101-$1,000	$1,001-$2,500	$2,501-$5,000	$5,001-$15,000	$15,001-$50,000	$50,001-$100,000	Over $100,000	Actual Amount Only if "Other" Specified	Date (Mo., Day, Yr.) Only if Honoraria	Valuation Method	$1,001-$5,000	$5,001-$15,000	$15,001-$50,000	$50,001-$100,000	$100,001-$250,000	Over $250,000
	ARCO ~~[illegible]~~ Royalties from Oil Pool Leases under Long Beach, Ca. ~~[illegible]~~ property		X								X								A			X			
S	Assistant Attorney General, Office of Justice Assistance							Salary																	
	WHITE HOUSE CREDIT UNION SAVINGS ACCOUNT			X							X								H			X			
	FUND FOR GOVERNMENT INVESTORS			X									X						H					X	
	CAPITAL PRESERVATION FUND			X									X						H					X	
DC	TRUST FOR LISA HERRINGTON, Capital Preservation Fund			X							X								H			X			
DC	TRUST FOR VICTORIA HERRINGTON, Captial Preservation Fund			X							X								H			X			
	U.S. TREASURY BILLS			X										X					H TER 1-18-85					X	
	Quail Hill Ranch Company Walnut Creek, CA								X										A	X					
	Century MGT. Company, Walnut Creek, CA (Holds Grd. Lease for 800 & 850 S. Broadway Properties)								X										A					X	
	EXXON Royalties from Community Oil and Gas Lease under Wilmington, Ca. property (interest in this property is limited to royalties)		X							X									(value less than $1000-)						

RBY 1/25/85

[illegible] Financial Disclosure Report
(Rev. 8-83)

PURCHASES, SALES, AND EXCHANGES

This schedule is applicable only in the case of annual and termination reports.

Page Number ► 4	Schedule B
Reporting Individual's Name JOHN S. HERRINGTON	
Agency Use Only	
Date of Filing (Month, Day, Year) JAN 18 1985	

Report Applicable Transactions, Even If Also Reported on Schedule A

S or DC	Identification of Property (real and personal)	Type of Transaction			Date (Month, Day, Year)		Category of Amount or Value (✓)					
		Purchase	Sale	Exchange	Purchase	Sale or Exchange	$1,001 to $5,000	$5,001 to $15,000	$15,001 to $50,000	$50,001 to $100,000	$100,001 to $250,000	Over $250,000
	NONE											

Page Number ➤ 5	Schedule C
Reporting Individual's Name JOHN S. HERRINGTON	
Agency Use Only	
Date of Filing (Month, Day, Year) JAN 18 1985	

GIFTS AND REIMBURSEMENTS

This schedule is applicable only in the case of annual and termination reports.

I. Lodging, Transportation, Food and Entertainment—*List each source totaling $250 or more in value*

S or DC	Source (Name and Address)	Brief Description	Value
	NONE		

II—All Other Gifts—*List each source totaling $100 or more in value*

S or DC	Source (Name and Address)	Brief Description	Value
	NONE		

III. Reimbursements—*List each source totaling $250 or more in value*

S	Source (Name and Address)	Brief Description	Value
	NONE		

LIABILITIES

This [illegible] applicable in the case of all reporting individuals.

Reporting Individual's Name: JOHN S. HERRINGTON

Agency Use Only

Date of Receipt (Mo., Day, Yr.): JAN 18 1985

Page Number: 6

Schedule: D

SP or DC	Name and Address of Creditor	Type of Liability (e.g. promissory note, margin account) Give date, interest rate and, if applicable, term	Category of Amount or Value (x) $1,001 to $15,000	$15,001 to $50,000	$50,001 to $100,000	$100,001 to $250,000	Over $250,000
	Wells Fargo Bank, 150 Westlake Boulevard, Tahoe City, California	9½ variable interest, 30 year promissory note, dated 11/76, secured by a Deed of Trust on #109 Tahoe Tavern, Tahoe City, Ca.			XX		
	Imperial Savings & Loan, 10000 West Temple Los Angeles, California	9.25% variable interest, 30 yr. promissory note, dated 11/76 secured by a Deed of Trust on 1043 Esther Dr., Pleasant Hill, CA		XX			
	Mr. and Mrs. Melvin E. Williamson 3362 Johnson Road, Lafayette, California	10%, 20 yr., promissory note secured by a Deed of Trust dated 6/78, on 101 Cliff Lane, Walnut Creek, Ca. 1/3 interest liable for full amount				XX	
	Crocker Bank, c/o: Ralph Sutro Co. 4900 Wilshire Blvd., Los Angeles, Ca.	9%, 30 yr. promissory note, dated 9/77, secured by Deed of Trust on 800 S. Broadway, Walnut Creek, Ca. ½ interest, liable for full amount					XX

POSITIONS HELD

Name and Address of Organization	Type of Organization	Position Held	From (Mo., Yr.)	To (Mo., Yr.)
Quail Hill Ranch Company; Walnut Creek, CA	Real Estate**	CEO/Director	1970	Present
Century Mgt. Company; Walnut Creek, CA	Real Estate	Chief Financial Officer/ Director	1976	Present
Broadway Associates; Walnut Creek, CA	Real Estate	Genl Partner	11/74	Present
	**(Corp. now dormant)			

COMPENSATION IN EXCESS OF $5,000 PAID BY ONE SOURCE This section is applicable only in the case of nominees and new entrants.

Source (Name and Address)	Brief Description of Duties
None	

RELATIONS WITH OTHER EMPLOYERS

Description of Terms of Any Agreement or Arrangement	Parties	Date (Mo., Day, Yr.)
NONE		

This schedule, except as noted for the third section, is applicable in the case of all reporting individuals.

Reporting Individual's Name	Agency Use Only Date Received (Month, Day, Year)	Page Number ➤	Schedule
JOHN S. HERRINGTON	JAN 18 1985	7	D

LIABILITIES

S or DC	Name and Address of Creditor	Type of Liability (e.g., promissory note, margin account) Give date, interest rate and, if applicable, term	Category of Amount or Value (✓) $10,001 to $15,000	$15,001 to $50,000	$50,001 to $100,000	$100,001 to $250,000	Over $250,000
	Colonial Mortgage Co. 7320 Old York Road, Philadelphia, Pa 19126	8½%, 30 yr. promissory note secured by a Deed of Trust dated 5/79, on 3203 North Main St., Pleasant Hill, Ca.		XX			
	Wells Fargo Bank 800 South Broadway, Walnut Creek, Ca.	10.9%, 15 yr.promissory note, dated 12/78, secured by a Deed of Trust on 850 S. Broadway Walnut Creek, Ca.			XX		
	Bank of California Walnut Creek, Ca	6%, 30 yr. promissory note, secured by a Deed of Trust on property, 160 Alderwood Lane, Walnut Creek, Ca.Dated 5/68		XX			

POSITIONS HELD

Name and Address of Organization	Type of Organization	Position Held	From (Mo., Yr.)	To (Mo., Yr.)
Cliff Lane Associates; Walnut Creek, CA	Real Estate	Genl. Partner	7/78	Present
Trust for Lisa Herrington	Trust	Trustee	4/14/78	Present
Trust for Victoria Herrington	Trust	Trustee	4/14/78	Present

COMPENSATION IN EXCESS OF $5,000 PAID BY ONE SOURCE

This section is applicable only in the case of nominees and new entrants.

Source (Name and Address)	Brief Description of Duties
See page 6	

RELATIONS WITH OTHER EMPLOYERS

Description of Terms of Any Agreement or Arrangement	Parties	Date (Mo., Day, Yr.)
See page 6		

Executive Level Position Statement

Position Title: Secretary

Grade: EL-I - Presidential Appointee

The Department of Energy (DOE) was created by the Department of Energy Organization Act of August 4, 1977, Public Law 95-91, Stat. 565, 42 U.S.C. 7101.

All of the statutory authority under which the Department functions is vested in the Secretary, except for certain authorities and responsibilities assigned by the Act to specific officers or components of the DOE.

The Secretary may generally redelegate his authority, organize and reorganize the positions and units within the DOE, acquire and maintain property, and generally administer the DOE.

The Secretary directs and supervises the administration of the DOE, decides major policy issues, acts as the principal energy advisor to the President, and serves as the principal spokesman for the Department.

AUG 29 1984

LIST OF PLEDGED ASSETS

#109 Tahoe Tavern Tahoe City, California	9 1/2% variable interest, 30 year promissory note, dated November, 1976, secured by a Deed of Trust.
1043 Esther Drive Pleasant Hill, California	9.25% variable interest, 30 year promissory note, dated November, 1976, secured by a Deed of Trust.
101 Cliff Lane Walnut Creek, California	10%, 20 year, promissory note, dated June, 1978, secured by a Deed of Trust. 1/3 interest liable for full amount.
800 S. Broadway Walnut Creek, California	9%, 30 year promissory note, dated September, 1977, secured by Deed of Trust. 1/2 interest, liable for full amount.
3203 North Main Street Pleasant Hill, California	8 1/2%, 30 year promissory note dated May, 1979, secured by a Deed of Trust.
850 South Broadway Walnut Creek, California	10.9%, 15 year promissory note, dated December, 1978, secured by a Deed of Trust.
160 Alderwood Lane Walnut Creek, California	6%, 30 year promissory note, dated May, 1968, secured by a Deed of Trust.

Attachment A

AFFIDAVIT

) ss

, being duly sworn, hereby states that he/she has read and signed the foregoing Statement for Completion by Presidential Nominees including the Financial Statement and that the information provided therein is, to the best of his/her knowledge and belief, current, accurate, and complete.

John S. Herrington

Subscribe and sworn before me this 18th day of January, 1985

Notary Public

My Commission expires 12/14/86

U.S. GOVERNMENT PRINTING OFFICE

THE WHITE HOUSE
WASHINGTON

January 29, 1985

Dear Mr. Chairman:

Pursuant to section 734.604, title 5, Code of Federal Regulations, I hereby certify that the information contained in the Standard Form 278 (Financial Disclosure Report) executed by me on January 15, 1985, incident to my nomination to the position of Secretary of Energy, is current as of today with respect to outside earned income and honoraria.

Respectfully,

John S. Herrington

John S. Herrington
Assistant to the President
for Presidential Personnel

The Honorable James A. McClure
Chairman, Committee on Energy
and Natural Resources
United States Senate
Washington, D.C. 20810

cc: The Honorable J. Bennett Johnston

David H. Martin
Director, Office of Government Ethics

✓ Ralph D. Goldenberg
Assistant General Counsel for General Law
Department of Energy

Department of Energy
Washington, D.C. 20585

FEB 19 1985

David H. Martin, Director
Office of Government Ethics
1717 H Street, N. W.
Washington, D.C. 20415

Dear Mr. Martin:

In accordance with section 734.804, title 5, Code of Federal Regulations, I enclose copies of the following documents provided to me by Mr. J. Michael Farrell, personal counsel to Secretary John S. Herrington:

1. Assignments of Subsurface Oil and Gas Leases, dated February 7, 1985, from John Stewart Herrington to The Jean Stewart Herrington Trust.
2. Copies of letters dated February 11, 1985, from J. Michael Farrell to Ms. Carolyn F. Turner, Exxon Company, U.S.A., and Mr. Steve Alexander, Arco Exploration Company, respectively, transmitting, *inter alia*, the Assignments of Subsurface Oil and Gas leases.

In Ralph D. Goldenberg's letter to you dated January 25, 1985, he stated that Secretary Herrington would convey his interest in certain royalties he was receiving from Exxon and Arco to his mother upon his confirmation by the Senate. Subsequently, the Secretary chose, instead, to convey these interests to The Jean Stewart Herrington Trust. I understand that this is a revocable, *inter vivos* trust created by his mother on December 28, 1982. I further understand that Associate Counsel to the President advised you of this change prior to the Secretary's confirmation, and that the opinion of your office is that the proposed change in assignee from his mother to her trust would not give the Secretary a financial interest in the trust within the meaning of section 208, title 18, United States Code.

Further, I have been advised by Associate Counsel to the President that a waiver pursuant to section 208(b)(1), title 18, United States Code, relating to his brother-partner's interests in the royalties, referred to in the January 25 letter, has been prepared and is awaiting execution. When it has been granted, I will notify you.

While I can give no opinion as to the legal sufficiency of the enclosed assignments under California law, I have no reason to doubt their validity.

By copy of this letter, and its enclosures, I am informing Gary G. Ellsworth, Chief Counsel, Committee on Energy and Natural Resources, United States Senate, of the Secretary's actions.

Sincerely,

Thomas E. Robinson

Thomas E. Robinson
Deputy Assistant General Counsel
for General Law

Enclosure

cc: Secretary Herrington
Gary G. Ellsworth, Esq.

LAW OFFICES
GLYNN & GRAHAM
SUITE 740
1920 N STREET, N. W.
WASHINGTON, D. C. 20036
(202) 293-6960

GREGORY C. GLYNN
RICHARD A. GRAHAM

OF COUNSEL
J. MICHAEL FARRELL

CABLE ADDRESS
GEELAW

February 11, 1985

Ms. Carolyn F. Turner
Exxon Company, USA
Post Office Box 2024
Houston, TX 77252-2024

Re: South Anahiem Community Oil and Gas Lease
John Stewart Herrington

Dear Ms. Turner:

Enclosed herewith is the Assignment of Subsurface Oil and Gas Lease executed February 7, 1985, whereby John Stewart Herrington transferred all of his right, title and interest therein to The Jean Stewart Herrington Trust. Copies of the original Lease Agreement dated May 25, 1954 was forwarded by you to the Office of the General Counsel, Department of Energy on January 28, 1985.

As a result of this Assignment all future payments pursuant to the Lease will go directly to The Jean Stewart Herrington Trust. Any questions concerning the trust should be directed to the trustee as follows:

Alan D. Herrington
1100 Acanto Place
Los Angeles, CA 90049

Thank you very much for your attention to this matter.

Very truly yours,

J. Michael Farrell

JMF:alb
Enclosure
cc: Alan D. Herrington, Trustee

LAW OFFICES
GLYNN & GRAHAM
SUITE 740
1920 N STREET N W
WASHINGTON D C 20036
(202) 293-6960

GREGORY C GLYNN
RICHARD A GRAHAM

OF COUNSEL
J MICHAEL FARRELL

CABLE ADDRESS
GEELAW

February 11, 1985

Mr. Steve Alexander
Arco Exploration Company
Post Office Box 600
Dallas, Texas 75221

Re: CAL-7900-2024; 7900-2009; 12201-17
Long Beach Unit, Trs. 10, 14 & 15
Los Angeles County, California
John Stewart Herrington

Dear Mr. Alexander:

Enclosed herewith is the Assignment of Subsurface Oil and Gas Lease executed February 7, 1985, whereby John Stewart Herrington transferred all of his right, title and interest therein to The Jean Stewart Herrington Trust. Copies of the original Lease Agreements dated October 27, 1954 were forwarded by you to the Office of the General Counsel, Department of Energy on January 25, 1985.

As a result of this Assignment all future payments pursuant to the Lease will go directly to The Jean Stewart Herrington Trust. Any questions concerning the trust should be directed to the trustee as follows:

Alan D. Herrington
1100 Acanto Place
Los Angeles, CA 90049

Thank you very much for your attention to this matter.

Very truly yours,

J. Michael Farrell

JMF:alb
Enclosure
cc: Alan D. Herrington, Trustee

FEB 0 7 198

ASSIGNMENT OF SUBSURFACE OIL AND GAS LEASE

This Assignment Agreement is executed this 7th day of February, 1985 by John Stewart Herrington, hereinafter referred to as "Assignor," for the following purposes:

WHEREAS, Assignor is the recipient pursuant to a devise of a Lessor's interest under a certain Oil and Gas Lease, hereinafter referred to as "lease" executed on October 27, 1954, with Richfield Oil Corporation whose interest was subsequently transferred to Arco Exploration Company (hereinafter referred to as "Arco") as Lessee duly recorded in Book 49729 at Page 320 of the Official Records in the Office of the County Recorder of Los Angeles, California, whereby Arco was demised for the purposes of exploring for and extracting oil, gas, hydrocarbons, and all associated substances that certain tract of land in the County of Los Angeles, California, described as follows:

Parcel 1: The Easterly 36 feet of the Westerly 110 Feet of Lots 26 and 28;

Parcel 2: The Easterly 38 feet of the Westerly 110 feet of Lots 22 and 24;

Parcel 3: The Northerly 10 feet of the Easterly 40 feet of the Westerly 150 feet of Lot 22;

ALL in Block 90 of the Townsite of Long Beach, as shown on map in Book 19, Pages 91 et seq., Miscellaneous Records of said county;

Parcel 4: The Westerly 100 feet of Lots 22, 24, 26 and 28 in Block 67 of the Townsite of Long Beach, as shown on map in Book 19, Pages 91 et seq., Miscellaneous Records of said county;

Parcel 5: Lots 2, 4, 6, 8 and the Northerly 10 feet of Lot 10, except the Westerly 75 feet thereof, in Block 77 of the Townsite of Long Beach, as shown on map in Book 19, Pages 91 et seq., Miscellaneous Records of said county;

Parcel 6: Lots 9 and 10 of the Tabernacle Tract, as shown in Map Book 1, Page 72, records of said county,

NOW, THEREFORE, in consideration of the sum of $1.00 and other good and valuable consideration, receipt of which is hereby acknowledge, Assignor hereby;

1. Assigns to The Jean Stewart Herrington Trust, created by Deed of Trust on December 28, 1982, hereinafter referred to as "Assignee," all of the Assignor's right, title and interest in the Lease;

2. Warrants to Assignee that Assignor is the part owner in fee of the land demised by said lease, that said lease is now in full force and effect, that Assignor is not in default in performance of the terms of said lease, and that no person of persons other than Assignor and Assignee have any right to any part of the royalties payable under said lease to said Assignor;

3. Agrees to promptly give notice of this assignment to the Lessee under said lease and to request in writing that the Lessee pay all royalties now or hereafter becoming due under said lease which Lessee will owe Assignor to Assignee.

This is the entire agreement executed this date heretofore set forth.

John Stewart Herrington

Acknowledgment

District of Columbia: ss

On the 7th day of February, 1985, before me appeared John Stewart Herrington, personally known to me to be the person whose name is subscribed to this instrument and acknowledged that he executed the same.

Albert E. Brown
Notary Public

My Commission Expires:
May 31, 1988

ASSIGNMENT OF SUBSURFACE OIL AND GAS LEASE

This Assignment Agrèement is executed this 7th day of February, 1985 by John Stewart Herrington, hereinafter referred to as "Assignor," for the following purposes:

WHEREAS, Assignor is the recipient pursuant to a devise of a Lessor's interest under a certain Oil and Gas Lease, hereinafter referred to as "lease" executed on May 25, 1954, with Apex Petroleum Corporation, Ltd. whose interest was subsequently transferred to Exxon Company USA (hereinafter referred to as "Exxon") as Lessee duly recorded in Book 47553 at Page 394 of the Official Records in the Office of the County Recorder of Los Angeles, California, whereby Exxon was demised for the purposes of exploring for and extracting oil, gas, hydrocarbons, and all associated substances that certain tract of land in the County of Los Angeles, California, described as follows:

> Lot two (2), Block Eleven (11), Range Eight (8) of New San Pedro known as Wilmington, in this "South Anaheim Community Oil and Gas Lease".

NOW, THEREFORE, in consideration of the sum of $1.00 and other good and valuable consideration, receipt of which is hereby acknowledge, Assignor hereby;

1. Assigns to The Jean Stewart Herrington Trust, created by Deed of Trust on December 28, 1982, hereinafter referred to as "Assignee," all of the Assignor's right, title and interest in the Lease;

2. Warrants to Assignee that Assignor is the part owner in fee of the land demised by said lease, that said lease is now in full force and effect, that Assignor is not in default in performance of the terms of said lease, and that no person of persons other than Assignor and Assignee have any right to any part of the royalties payable under said lease to said Assignor;

3. Agrees to promptly give notice of this assignment to the Lessee under said lease and to request in writing that

the Lessee pay all royalties now or hereafter becoming due under said lease which Lessee will owe Assignor to Assignee.

This is the entire agreement executed this date heretofore set forth.

Jno S. Herrington
John Stewart Herrington

Acknowledgment

District of Columbia: ss

On the 7th day of February, 1985, before me appeared John Stewart Herrington, personally known to me to be the person whose name is subscribed to this instrument and acknowledged that he executed the same.

Albert E Brown
Notary Public

My Commission Expires:
May 7, 1988

ASSIGNMENT OF
SUBSURFACE OIL AND GAS LEASE

This Assignment Agreement is executed this 7th day of February, 1985 by John Stewart Herrington, hereinafter referred to as "Assignor," for the following purposes:

WHEREAS, Assignor is the recipient pursuant to a devise of a Lessor's interest under a certain Oil and Gas Lease, hereinafter referred to as "lease" executed on October 27, 1954, with Richfield Oil Corporation whose interest was subsequently transferred to Arco Exploration Company (hereinafter referred to as "Arco") as Lessee duly recorded in Book 49729 at Page 322 of the Official Records in the Office of the County Recorder of Los Angeles, California, whereby Arco was demised for the purposes of exploring for and extracting oil, gas, hydrocarbons, and all associated substances that certain tract of land in the County of Los Angeles, California, described as follows:

Parcel 1: The Easterly 36 feet of the Westerly 110 Feet of Lots 26 and 28;

Parcel 2: The Easterly 38 feet of the Westerly 110 feet of Lots 22 and 24;

Parcel 3: The Northerly 10 feet of the Easterly 40 feet of the Westerly 150 feet of Lot 22;

ALL in Block 90 of the Townsite of Long Beach, as shown on map in Book 19, Pages 91 et seq., Miscellaneous Records of said county;

Parcel 4: The Westerly 100 feet of Lots 22, 24, 26 and 28 in Block 67 of the Townsite of Long Beach, as shown on map in Book 19, Pages 91 et seq., Miscellaneous Records of said county;

Parcel 5: Lots 2, 4, 6, 8 and the Northerly 10 feet of Lot 10, except the Westerly 75 feet thereof, in Block 77 of the Townsite of Long Beach, as shown on map in Book 19, Pages 91 et seq., Miscellaneous Records of said county;

Parcel 6: Lots 9 and 10 of the Tabernacle Tract, as shown in Map Book 1, Page 72, records of said county,

NOW, THEREFORE, in consideration of the sum of $1.00 and other good and valuable consideration, receipt of which is hereby acknowledge, Assignor hereby;

1. Assigns to The Jean Stewart Herrington Trust, created by Deed of Trust on December 28, 1982, hereinafter referred to as "Assignee," all of the Assignor's right, title and interest in the Lease;

2. Warrants to Assignee that Assignor is the part owner in fee of the land demised by said lease, that said lease is now in full force and effect, that Assignor is not in default in performance of the terms of said lease, and that no person of persons other than Assignor and Assignee have any right to any part of the royalties payable under said lease to said Assignor;

3. Agrees to promptly give notice of this assignment to the Lessee under said lease and to request in writing that the Lessee pay all royalties now or hereafter becoming due under said lease which Lessee will owe Assignor to Assignee.

This is the entire agreement executed this date heretofore set forth.

John S. Herrington
John Stewart Herrington

Acknowledgment

District of Columbia: ss

On the 7th day of February, 1985, before me appeared John Stewart Herrington, personally known to me to be the person whose name is subscribed to this instrument and acknowledged that he executed the same.

Albert E. Brown
Notary Public

My Commission Expires:
May 31, 1988

THE WHITE HOUSE
WASHINGTON

February 21, 1985

Dear Secretary Herrington:

I am advised that certain of your brother's financial interests, specifically, his 1/12th interest in two Arco and one Exxon subsurface oil and gas leases, recorded respectively in Book 49729 at page 320 and page 322, and Book 47553 at page 394, of the official records in the office of the County Recorder of Los Angeles, California, are imputed to you as a matter of law. I am further advised that this imputation results from the fact that you and your brother, David S. Herrington, are partners in certain real estate investments.

Pursuant to the authority vested in me by section 208(b)(1) of title 18 of the United States Code, and as President of the United States, I have determined that the aforementioned financial interests are not so substantial as to be deemed likely to affect the integrity of the services which the Government may expect from you as Secretary, Department of Energy.

Any questions you may have concerning the action I have taken in this matter should be directed to the Counsel to the President.

Sincerely,

Ronald Reagan

The Honorable John S. Herrington
Secretary of Energy
Washington, D.C.

Department of Energy
Washington, D.C. 20585

FEB 22 1985

David H. Martin, Director
Office of Government Ethics
P.O. Box 14108
Washington, D.C. 20044

Dear Mr. Martin:

In accordance with my letter to you dated February 19, 1985, I hereby notify you that Secretary John S. Herrington has been granted a waiver pursuant to section 208(b)(1), title 18, United States Code. The waiver relates to his brother-partner's interests in certain mineral royalties more specifically described in Ralph D. Goldenberg's letter to you dated January 25, 1985.

By a copy of this letter, I am also informing Gary G. Ellsworth, Chief Counsel, Committee on Energy and Natural Resources, United States Senate.

Please advise me if I may be of further assistance.

Sincerely,

Thomas E Robinson

Thomas E. Robinson
Deputy Assistant General Counsel
for General Law

cc: Secretary Herrington

Gary G. Ellsworth, Esq.

APPENDIX II

Responses of John S. Herrington to Additional Committee Questions

---

Department of Energy
Washington, D.C. 20585

February 4, 1985

Honorable James A. McClure
Chairman, Committee on Energy and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed for the record are answers to questions submitted in writing to the Honorable John S. Herrington pursuant to the hearing on his nomination to be Secretary of Energy, held by your Committee on January 31, 1985.

In compliance with your request, included are 50 copies for distribution to members of the Committee.

Please let me know if I can be of further service.

With best wishes,

Sincerely,

Rob Odle

Robert C. Odle, Jr.
Assistant Secretary for
Congressional, Intergovernmental
and Public Affairs

Enclosures

POST-HEARING QUESTIONS AND ANSWERS

Relating to The

JANUARY 31, 1985, CONFIRMATION HEARING

of

JOHN S. HERRINGTON

NOMINEE FOR SECRETARY
U.S. DEPARTMENT OF ENERGY

Before The

COMMITTEE ON ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

QUESTIONS FROM SENATOR McCLURE

Creation of a Department of Energy and Natural Resources

Question 1A: Am I correct that you support continuation of the Department of Energy as a separate Department? In other words, you do not see yourself as a caretaker until the functions of the Department are transferred elsewhere?

Answer: As I have previously stated, the President has nominated me to be a full time Secretary of Energy and not a caretaker. I expect to apply vigorous leadership to management of the Department. However, the President has requested that once confirmed, I review the question of management, efficiency, and organization of the Department and provide him with a report and options on this matter.

QUESTIONS FROM SENATOR McCLURE

Creation of a Department of Energy and Natural Resources

Question 1B: What is your position regarding the location of the atomic energy defense programs within the Executive Branch? In particular, would you support, or oppose, their transfer to the Department of Defense?

Answer: It is my understanding that there is a long history of successful management of weapons development, testing, and production by the Department of Energy and its predecessor agencies. Although I have formed no opinion on specific issues associated with management of this program, I do understand that there is concern that the program should be kept under civilian control.

On the other hand, there may be issues arising from the existing structures and relationships which need to be carefully examined and resolved. As you know a special Blue Ribbon Task Group has been established to focus primarily on the budgetary aspects of the Atomic Energy Defense Programs. I expect this group may also address other aspects of the DOE-DOD relationship. I will become closely involved in the deliberations and activities of the Task Group and look forward to its report.

QUESTIONS FROM SENATOR McCLURE

Privatization of Certain Federal Energy Activities

Question 2A: What is your position on the so-called "privatization" of Federal Power Marketing programs, such as the Bonneville Power Administration?

Answer: I believe DOE should not take actions which would unduly destabilize existing relationships in the energy areas. I certainly do not favor the privatization of any power marketing programs against the will of the people and localities served by them. Should it appear that any particular locality or region was interested in accepting management of a power marketing program, I would be willing to consider it.

QUESTIONS FROM SENATOR McCLURE

Privatization of Certain Federal Energy Activities

Question 2B: What is your position on the so-called "privatization" of the DOE Uranium Enrichment services?

Answer: I believe that DOE has an obligation to continue to make available uranium enrichment services under the existing law. Whether at some point in the future it would be possible or desirable to have such services performed by the private sector is an issue I plan to examine closely.

QUESTIONS FROM SENATOR McCLURE

What is the Ability of the United States to Meet Its Obligations Under the International Energy Agreement

Question 3A: During the last 10 years there have been three major disruptions in international petroleum supplies, which have increased oil prices by ten-fold. The United States is now importing more than 5 million barrels of oil per day or 1/3 of our consumption. Imports increased by 7 percent between 1983 and 1984.

Clearly the United States remains vulnerable to a disruption of international oil supplies.

Do you support continued U.S. participation in the International Energy Program?

Answer: I support U.S. participation in the International Energy Program under our current international obligations.

QUESTIONS FROM SENATOR McCLURE

What is the Ability of the United States to Meet Its Obligations Under the International Energy Agreement

Question 3B:	Do you support extension of Title II of the Energy Policy and Conservation Act, (which authorizes United States Government participation in the International Energy Program), beyond its current expiration date of June 30, 1985?
Answer:	It is my understanding that the Department is currently conducting a review of Title II of the Energy Policy and Conservation Act (EPCA) as part of an overall examination of the expiring EPCA authorities. I will not make a decision on whether to support an extension of Title II of the EPCA until that review has been completed.

QUESTIONS FROM SENATOR McCLURE

Status of the Strategic Petroleum Reserve

Question 4: Current statutory policy regarding the Strategic Petroleum Reserve provides for (a) permanent storage capacity of 750 million barrels and (b) a drawdown and distribution capability of 4.4 million barrels per day.

a. Do you support completion of the Strategic Petroleum Reserve?

b. Do you support completion of Phase II (610 million barrels of storage capacity)?

c. Do you support suspension (or postponement) of fill of the Strategic Petroleum Reserve? In addition, what is your position on the crude oil that has been purchased, or will be purchased with fiscal year 1985 funds?

Answer: I believe that strategic oil storage is an effective way to reduce vulnerability to oil market disruptions, and I believe both the Congress and the Administration can be proud of the progress made since 1980 to expand the size of the reserve.

I support an adequate Strategic Petroleum Reserve, but I do not believe that necessarily requires a 750 million barrel total, which is commonly referred to as "completion."

I support what I understand will be the President's decision not to request funds for additional purchases beyond the end of FY 1985 under current circumstances. Crude oil that has been purchased or will be purchased with FY 1985 funds should of course be placed in the Reserve.

QUESTIONS FROM SENATOR McCLURE

Petroleum Overcharge Restitution Funds

Question 5: Over $600 million of funds from the settlement of petroleum overcharges are being held in escrow accounts pending their distribution.

A. Do you support Federal attachment of these funds for eventual distribution by the Congress?

Answer: I believe that the first priority in distributing overcharge recoveries is to identify and provide direct restitution to those who were overcharged. I believe that congressional direction would be highly desirable as to an appropriate form of indirect restitution when it is not feasible to identify and provide refunds directly to those who were overcharged.

B. Does the Administration intend to submit such legislation to the Congress?

Answer: I understand that the Adminstration submitted overcharge legislation to the Congress last year and a similar proposal is being considered for this year. As Secretary of Energy I would review any proposal carefully before submitting it to the Congress.

C. Do you support continuation of the DOE Weatherization Program and the DOE Schools and Hospital Program, with direct appropriations?

Answer: I have been advised that last year's overcharge legislation provided for the use of overcharge monies to fund those programs for the next five years to the extent that such monies were available, with the balance coming from the general fund of the Treasury. I, of course, would review this matter in detail if I am confirmed by the Senate.

QUESTIONS FROM SENATOR McCLURE

Adequacy of Electric Generating Capacity

Question 6A:	What do you envision as the role of the Department of Energy in support of a strong electric utility industry that can support future growth in electricity demand?
Answer:	The Department's programs and policies affect the nation's electric power industry in many ways. The most basic support the Department gives the electric power industry stems from ongoing research on a wide range of long term technologies including nuclear, fossil and renewable resources. By assuring that the range of technologies that the industry has to choose from is as broad and varied as possible, we substantially enhance the ability and efficiency of our nation's electricity supply.

QUESTIONS FROM SENATOR McCLURE

Adequacy of Electric Generating Capacity

Question 6B: What do you envision as the role of nuclear power in our nation's energy supply?

Answer: Our nation's continued economic growth, world-wide competitiveness and security are dependent on the availability of sufficient energy supplies. Nuclear power is important in maintaining a balanced and mixed energy resource base.

Nuclear's share of our nation's electricity mix has grown steadily for the past two decades to its current level of over 13%. This share will continue to grow over the remainder of this decade as the remaining plants in the construction pipeline are brought into service.

I intend to continue to promote policies and programs which can make nuclear power an option for the Nation's utilities should that be their choice.

QUESTIONS FROM SENATOR McCLURE

Adequacy of Electric Generating Capacity

Question 6C: What do you see as the Department of Energy function in the commercial development of breeder reactor technology?

Answer: The Department of Energy's role in breeder reactor technology should focus on long run research and development rather than commercial development, which should be left to the private sector.

QUESTION FROM SENATOR McCLURE

Final Disposal of TMI-2 Core

Question 7: It is my understanding that, following DOE's examination of the TMI-2 core at the Idaho National Engineering Laboratory, the core will be shipped elsewhere for final disposal, either to a commercial repository or to another DOE site. Am I correct in my understanding?.

Answer: Yes.

QUESTION FROM SENATOR McCLURE

Reactor Safety

Question 8: In 1980, Congress passed the Nuclear Safety Research, Development and Demonstration Act (P.L. 96-567), which defined the appropriate role that DOE should take with respect to reactor safety research. Historically, however, since the dismantlement of the Atomic Energy Commission, the responsibility to conduct reactor safety research has centered with NRC's programs.

a. Do you believe that the DOE has the obligation to broaden their role in the conduct of reactor safety research?

b. Given DOE's capabilities within the Office of Nuclear Energy, what areas do you think would be appropriate for DOE to explore with respect to nuclear safety research?

Answer: My understanding is that the Department will submit, concurrent with the Fiscal Year 1986 budget, the Annual Report to Congress on the Nuclear Research, Development and Demonstration Program Plan. The Plan addresses the program for developing practical improvements in the generic safety of nuclear power plants during the next five years. I anticipate that the Department will continue, in cooperation with the Nuclear Regulatory Commission, to pursue a coordinated nuclear safety research program to assure public health and safety.

QUESTIONS FROM SENATOR McCLURE

Strategic Minerals

Question 9: In DOE's Budget Request for FY 1985, the Materials Science Program goals were described as follows: "provide for needed continuity and permit a reasonable level of utilization of major facilities, strengthening of important topical areas, and initiation of some new thrust areas recommended by workshops and panels of the Council on Materials Science." In addition, DOE described a subprogram to support "both directly and indirectly the development of a national position on critical materials."

To what extent can the Department contribute to the development of novel mineral extraction techniques and advanced materials to alleviate our dependence on critical and strategic minerals, many of which are in precious supply or must be imported from politically unstable regions of the world?

Answer: I am aware of the general issue of strategic minerals and the dependence that we have on foreign sources for many of them. I am also aware of the fact that there are research programs that seek to develop new ways to extract minerals, and to create materials that can be used as substitutes in certain applications. I believe that we should do what we can to lessen our dependence on foreign supplies of strategic minerals in line with our general research policies. In my opinion, the DOE laboratories are well equipped to play a useful role in this area of research and technology development.

QUESTIONS FROM SENATOR McCLURE

New Technological Development

Question 10: In order to restore the U.S. industrial competitive edge, we must develop new industrial technologies and processes that are more energy efficient and that will produce higher quality products.

(a) To what extent can DOE contribute its expertise towards the development of such advanced industrial technologies, especially with respect to their energy requirements?

(b) Is this an area where engineering science capabilities might play a large role towards development of energy efficient technologies? Does DOE have any such expertise in engineering science?

Answer: (a) It is my understanding that DOE has an ongoing and successful program of research that focuses on energy-intensive industrial processes. I am told that it is a collaborative program, typically cost-shared with industry, funded as part of the Department's energy conservation R&D activities. One objective of this program is to develop completely new and highly advanced technologies that afford dramatic improvements, or so-called "quantum jumps" in energy efficiency. Such efforts, if they were successful, would promise significant competitive advantages.

(b) As I become more familiar with the Department of Energy and its national laboratories, I am increasingly impressed by the considerable engineering science capabilities that are available.

In today's highly competitive global economy, advanced technologies play a critically important role. DOE's ongoing efforts, I am told, are making significant contributions in this area, and shall continue to do so.

The current policy, which seems reasonable to me, is to proceed in a cautious and deliberate manner, so as not to invade the proper role of private industry. The DOE is focusing limited Federal R&D support on areas of great opportunity, but high technological risk. As technologies progress in their development and increase in their likelihood of success, DOE's role diminishes and industry's role increases. This approach both supports and limits the extent to which DOE can and should contribute toward national efforts to restore our industrial competitive edge.

QUESTIONS FROM SENATOR McCLURE

Question 11A: Mr. Herrington, the Bonneville Power Administration has recently adopted a new policy of allocating access to the capacity of the Northwest/Southwest Intertie. This policy gives BPA and Pacific Northwest utilities a priority in utilizing the Intertie capacity for sending energy to California markets. This policy has reduced access to the Intertie by Canadian utilities. They are naturally concerned about their reduced access under some circumstances to the California markets. Recognizing the Canadian concern, BPA initiated negotiations with the Canadians to provide greater access to the Intertie in exchange for storage rights in Canadian reservoirs, but no agreement has been reached at this time.

What is the status of the negotiations?

Answer: It is my understanding that BPA discussed with Canadian representatives the possibility of access to the California Intertie in exchange for storage in Canadian reservoirs. According to my information, this was rejected by the Canadians prior to the adoption of the Interim Intertie Access Policy. I further understand that discussions are still being held but no conclusion has been reached at this time.

QUESTIONS FROM SENATOR McCLURE

Question 11B: Could you supply, for the record, what the acquisition of additional upstream storage would mean for the operation of the Federal Columbia River Power System?

Answer: According to BPA officials, the acquisition of additional upstream storage in Canada could have several beneficial results for the operation of the Federal Columbia River Power System. BPA feels that additional storage could be used to conserve energy by storing water during times of excess runoff when extra power generation could not be sold. This could also have immediate flood control benefits. In addition, it is my understanding that by properly coordinating the release of the water stored additional sales of electrical power could be provided to Pacific Northwest industries or utilities, or to Southwest utilities. Finally, in the opinion of BPA, the use of additional storage could enhance their efforts to implement the Pacific Northwest Power Planning Council's Fish and Wildlife program.

QUESTIONS FROM SENATOR HATFIELD

Question 12A: Mr. Herrington, as the nominee for Secretary of Energy in this Administration, am I correct that you share the President's general policy of relying upon the marketplace rather than upon government regulation for pricing and allocation of energy supplies?

Answer: Yes. I believe that the marketplace is the most efficient and desirable mechanism for allocating energy supplies. President Reagan's decontrol of crude oil, gasoline and propane prices in January 1981 resulted in significant energy and economic benefits to the Nation, including increased domestic oil production, reduced prices for petroleum products, continued progress in conservation and reduced oil imports. I believe we would see similar results if wellhead price controls were removed from natural gas. It is not possible for government price and allocation regulations to come close to the economic efficiency of the millions of consumer decisions made every day in response to changing market conditions and signals.

QUESTIONS FROM SENATOR HATFIELD

Question 12B: A recent initial decision at the Federal Energy Regulatory Commission noted that the Bonneville Power Administration, the federal power marketing agency in the Northwest, is dramatically under-pricing energy which it sells that is surplus to its needs. Would you agree that such energy should be priced to recover the overall cost of providing it?

Answer: I would generally agree that Federal electric power should be priced to recover all costs of providing it, if it is marketable at such rates.

QUESTIONS FROM SENATOR HATFIELD

Question 12C: Would you not also agree that the Bonneville Power Administration should follow established private enterprise practices in pricing and selling such surplus or economy energy, particularly in light of the fact that most other federal power marketing agencies have adopted such practices?

Answer: The whole area of Federal power rate schedules for all types of energy is very complex and requires careful study and consideration. This is particularly true in the case of BPA where specific and complex provisions of law govern its ratemaking.

QUESTIONS FROM SENATOR WEICKER

Energy Conservation

Question 13A: Do you feel that energy conservation is or should be treated as an energy resource?

Answer: Yes, energy conservation continues to make a significant contribution to the Nation's increasing energy and economic efficiency. In recent years, the amount of energy required to produce a constant dollar of gross national product steadily declined -- by more than 20 percent since 1973. Total energy consumption in 1983 was actually *less* than that of ten years earlier, and far below what pre-1973 trends would have otherwise predicted had they continued.

QUESTION FROM SENATOR WEICKER

Energy Conservation

Question 13B: What is your overall view of energy conservation, are you committed to it and do you intend to treat it as an important energy resource?

Answer: I am strongly committed to the support of energy conservation. It is a significant energy resource. Energy conservation plays a prominent role in overall national energy policy and is a critical element of a balanced and diverse energy resource system. Its continued development affords important opportunities for further improvements in our Nation's strategic security as well as in energy and economic productivity.

QUESTIONS FROM SENATOR WEICKER

Energy Conservation

Question 13C: If Congress continues to fund energy conservation programs, at, or close to, levels of the last four years, would you intend to carry out the responsibilities of the authorizing statutes?

Answer: I will faithfully carry out my responsibilities under the law.

QUESTIONS FROM SENATOR WEICKER

Energy Conservation

Question 13D: What is DOE's position relative to the Residential Conservation Program now that utility notification requirements have expired?

Answer: It is my understanding that in light of the January 1, 1985 expiration of the requirement for utilities to notify their customers of the availability of RCS services, the Department has determined that it will formally notify States and utilities that utilities may terminate their RCS programs within a reasonable time after they have completed their current cycle of unconditional audit offers.

QUESTIONS FROM SENATOR WEICKER

Energy Conservation

Question 13E: Does DOE intend to continue with the program?

Answer: I understand that the Department of Energy intends to continue with an orderly phase-out of the RCS program. I further understand that the Department will continue to encourage States and utilities to implement voluntary residential energy conservation programs.

QUESTIONS FROM SENATOR WEICKER

Energy Conservation

Question 13F: What does DOE propose to do with those funds collected by DOE in settlement of overcharges resulting from pricing and allocation violations under The Emergency Petroleum Allocation Act?

Answer: It is my understanding that proceedings are underway in the Department to identify those who were overcharged and to ascertain the amount of the overcharge in order to provide persons overcharged with direct restitution. I also understand that submission of a legislative proposal similar to one from last year is being considered with respect to distribution of the overcharge funds remaining after direct restitution is accomplished.

QUESTIONS FROM SENATOR WEICKER

Energy Conservation

Question 13G: The creation of PORF would direct that only persons eligible for these three Federal programs would receive direct restitution for their injuries as a result of oil overcharges. What about other groups that were overcharged? Restitution is a payment to compensate for an injury. The PORF legislation would replace dollar for dollar one funding source with another without any increase in benefits to compensate for past injury. Isn't that a correct analysis?

Answer: Based on the information I have received to date on last year's overcharge proposal the analysis is not correct. The proposal dealt with only the portion of overcharge recoveries that is left after direct restitution has been made. In other words all overcharged persons, groups, or classes would have first call on the funds. After the process of identifying and compensating specific overcharge victims is completed, the remaining funds would go into PORF. Funds from the PORF would have the effect of funding programs broadly assisting those who may have suffered from overcharges. Once that is done, Congress and the Administration might conclude that additional taxpayer funds are not needed.

QUESTIONS FROM SENATOR WEICKER

Energy Conservation

Question 13H: What happens to these three Federal programs once the PORF funds are used up?

Answer: I understand that last year's proposal would have provided a total of $10-11 billion over a five year period for those programs, whether or not PORF funds would have covered that amount. Beyond that time, I believe any such program should be reevaluated.

QUESTIONS FROM SENATOR WEICKER

Energy Conservation

Question 13I: The press has recently been focusing on the activities of OPEC and pointing out that although the nation is not currently suffering from an oil crisis, the fundamental problem of U.S. vulnerability to overseas oil supplies remains. Do you agree?

Answer: I understand that our vulnerability has diminished because U.S. petroleum demand has declined and the likelihood of a major oil supply disruption is much lower. However, our vulnerability has not been eliminated, I am aware that many of our allies remain significantly dependent on imported oil, particularly from the volatile Middle East. Obviously, any energy emergency affecting them also would have economic implications for us.

QUESTIONS FROM SENATOR WEICKER

Energy Conservation

Question 13J: What policies would you advocate in response to this continuing vulnerability?

Answer: It is my intention to continue the policy of reduced energy dependence and development of broad-based energy sources while not ignoring the important role that the Government can play in an energy emergency. This role includes the timely use of the Strategic Petroleum Reserve, as well as other emergency response programs which I am aware are currently being developed within the Department. I intend to give this area careful thought and attention in the next several months.

QUESTIONS FROM SENATOR WEICKER

Energy Conservation

Qyestion 13K: Many, and I think I am inclined to include myself in the group, suggest strong policies to reduce demand, such as oil import or automobile gas taxes. As Secretary would you consider such policies?

Answer: In general, I believe that efforts by the government to restrain demand are inconsistent with a market oriented energy policy. However, I have been briefed on the issue of a tax on imports of gasoline and understand that there are arguments supporting and opposing such a tax. On the one hand, such a tax could enhance national security by reducing oil imports. It could also increase Federal revenues. On the other hand, such a tax would cause domestic oil prices to rise and would encourage more rapid depletion of our domestic petroleum resources. Higher oil prices would hurt consumers and industry, lead to renewed inflationary pressures, and threaten the pace of our economic growth. I am particularly concerned about the effect such a tax would have on consumers. Not only would oil prices rise, but the prices of many other essential goods and services would rise because the energy needed to produce them would be more expensive.

I believe these factors must all be considered when examining the overall effect of a tax imposed on oil imports or on gasoline. I support the judgment of this Administration that an import tax should not be imposed.

QUESTIONS FROM SENATOR WEICKER

Energy Information Agency

Question 14A: Do you feel that EIA is an independent part of DOE and not to be influenced by certain Secretarial or other Administration policies?

Answer: Yes. I support the language in the Department of Energy Organization Act, which I understand provides that the Administrator is not required to obtain the approval of any other Department official in connection with the collection or analysis of information, or the approval of any other United States official with respect to the substance of any statistical or forecasting technical reports he prepares in accordance with law. Of course, EIA is a very helpful part of the Department in providing information and analyses relevant to Department activities.

QUESTIONS FROM SENATOR WEICKER

Energy Information Agency

Question 14B: EIA is not collecting information from States on bottled gas sales and use. This has affected allocation of monies from such programs as LIHEAP [Low Income Home Energy Assistance Program] and Low-Income Weatherization, because of a lack of data. What is your opinion on this?

Answer: EIA informs me that data provided to the Social Security Administration (SSA) for its LIHEAP program meets SSA requirements, both for fund allocation and for analysis. Data previously collected by EIA concerning sales and use of bottled gas by State and sector was discontinued in 1983 because it was extremely costly and inaccurate. After investing in quality improvements to its monthly petroleum supply data program, EIA now collects regional residential propane supply information, as part of that program, and this has proven to be satisfactory. The DOE Low-Income Weatherization program does not depend upon EIA data for fund allocation.

QUESTIONS FROM SENATOR WEICKER

Energy Information Agency

Question 14C: Do you feel that EIA is able to collect the type of data necessary to carry out Congressional mandates with available funds?

Answer: Yes, based upon my initial briefings, I believe that the EIA is able to collect the data necessary to carry out a "central, comprehensive and unified..." energy information program as required by law.

QUESTIONS FROM SENATOR WEICKER

Renewable Energy Investment Tax Credits

Question 15A: Do you believe that energy investment tax credits help promote the development of alternative energy sources?

Answer: Yes, however, I am told that the amount of hard data concerning this issue is in fact quite limited. My understanding is that the energy tax credits have historically had positive effects from the energy point of view. I believe that properly formulated incentives can work, and I have taken advantage of the conservation tax credits myself. At the same time, it is important that consideration be given to the impact of tax credits and other tax benefits on federal deficits.

QUESTIONS FROM SENATOR WEICKER

Renewable Energy Investment Tax Credits

Question 15B: Would you, or do you support an extension of the Energy Investment Tax Credits beyond December 31, 1985?

Answer: From an energy standpoint, I want to be certain that conservation and renewable energy technologies have a reasonable chance to be competitive with other energy sources, which may require extension of energy tax credits beyond December 31, 1985. However, tax and energy policy represents a complex subject area which will require additional study on my part to reach a personal conclusion as to the best method for accomplishing these objectives.

QUESTIONS FROM SENATOR WEICKER

Atomic Energy Act

Question 16A: As Secretary, what would you recommend as the Department's response to the fact that several Americans have been working in South African nuclear facilities without DOE approval, as is required under the Atomic Energy Act?

Answer: First, I have been assured that every effort is being made to identify any involved Americans and bring them into compliance with U.S. law and regulations. I understand that the Department is in the process of communicating with any Americans now thought to be working in a South African nuclear facility so that a determination can be made on whether their activities require authorization. Further, I am informed that the DOE is working closely with the Departments of State and Justice on this matter. I support this approach and would be prepared to take whatever administrative or legal actions are appropriate to resolve this situation.

QUESTIONS FROM SENATOR WEICKER

Atomic Energy Act

Question 16B: Do you advocate a policy of assisting the South African nuclear program despite their policies of racial discrimination?

Answer: A request for nuclear cooperation would be approved only if DOE determines that the activity will not increase the risk of proliferation and will further U.S. nonproliferation efforts. Any such approval is subject to the concurrence of the Department of State, whose judgment is also based on our overall foreign policy interests. In the case of South Africa, which has not signed the Non-Proliferation Treaty, I would advocate the closest scrutiny of any nuclear cooperation.

QUESTIONS FROM SENATOR WEICKER

Atomic Energy Act

Question 16C:	Has this cooperation by the U.S. with South Africa's nuclear industry led to any changes in any South African policies?
Answer:	I have been informed that progress has been made to broaden the application of safeguards in South Africa, and to encourage it to participate in the non-proliferation regime. South Africa announced in January 1984 that it will conduct its external nuclear affairs in a manner that is consistent with the spirit, principles, and goals of the Non-Proliferation Treaty and the Nuclear Suppliers Group Guidelines. This includes requiring IAEA safeguards on all South African exports of uranium, sensitive technology, and nuclear equipment. This kind of progress continues to be possible so long as a productive dialogue can be maintained with countries not accepting comprehensive safeguards.

QUESTIONS FROM SENATOR WEICKER

Atomic Energy Act

Question 16D:	For example, has South Africa agreed to allow international inspection of their nuclear facilities in accordance with U.S. non-proliferation policies?
Answer:	I have been advised that South Africa has a nuclear program consisting of both safeguarded and unsafeguarded facilities. The two Keoberg power reactors and the research reactor, SAFARI, are under international safeguards. The pilot enrichment plant, as well as the new commercial enrichment plants, are not under safeguards. I have also been advised that, as a result of our dialogue on nuclear matters, South Africa has resumed discussions with the International Atomic Energy Agency regarding the application of safeguards to its commercial enrichment facility at Valindaba.

QUESTIONS FROM SENATOR WEICKER

Atomic Energy Act

Question 16E: Then will you be reviewing the policy of authorizing Americans to work in South African nuclear facilities?

Answer: It is my understanding that, in all cases involving authorizations for Americans to work in countries such as South Africa, a thorough review is conducted, not only by DOE, but by other Executive Branch agencies and the Nuclear Regulatory Commission as well. In coordination with these agencies, I would be reviewing the policy on a continuing basis.

QUESTIONS FROM SENATOR WEICKER

Atomic Energy Act

Question 16F: Is there any evidence that South Africa tried to hide their efforts to hire American nuclear workers from DOE?

Answer: It is my understanding that DOE has no evidence of this. I am further informed that an effort is currently underway to contact U.S. utilities from which U.S. citizens were recruited in order to determine how these people were hired.

QUESTIONS FROM SENATOR DOMENICI

Question 17: What does DOE propose to do with the funds collected by DOE in settlement of overcharges resulting from pricing and allocation violations under the EPAA?

Answer: It is my understanding that proceedings are underway in the Department to identify those who were overcharged and to ascertain the amount of the overcharge in order to provide persons overcharged with direct restitution. I also understand that DOE is considering submission of a legislative proposal similar to last year's for distribution of the overcharge funds remaining after direct restitution is accomplished.

QUESTIONS FROM SENATOR DOMENICI

Question 18: What does DOE propose to do about those small independent oil refiners who were awarded exception relief from the Entitlements Program (which has never been implemented)?

Answer: On January 9, 1985, the Economic Regulatory Administration (ERA) announced its final decision on the disposition of unimplemented exception orders that awarded relief to small and independent oil refiners. (50 FR 1919, January 14, 1985). In this decision, ERA stated the Departmental policy that if the Office of Hearings and Appeals (OHA) determines that refiners as a class were injured by overcharge activity, OHA will fund exception relief from that portion of refund money which corresponds to the injury sustained by refiners as a class.

QUESTIONS FROM SENATOR DOMENICI

Question 19: How long will it be before the small refiners get their money?

Answer: I am advised that the Office of Hearings and Appeals (OHA) currently is in the process of collecting and analyzing evidence concerning whether, and to what extent, refiners as a class were injured by overcharge activity. It is my understanding a decision could be forthcoming in several months, and I would expect that if a finding is made that refiners as a class sustained injury, the OHA would act expeditiously to satisfy exception orders.

QUESTIONS FROM SENATOR DOMENICI

Question 20: What are your intentions in regard to Secretary Hodel's recent decision to curtail information dissemination of any sort, including publications on various DOE programs? I wonder the wisdom of the management decision which continues certain research and development programs, and even technology transfer programs, but chooses to cut back on efforts to let the public know of such programs and their usefulness.

Answer: I am not aware of the actions you cite to curtail publications. I believe that the Department should see that useful information is conveyed to the public, although economies in the cost of doing so should be vigorously pursued.

QUESTION FROM SENATOR DOMENICI

QUESTION 21: There is a program called NATAS, the National Appropriate Technology Assistance Service, within DOE's energy conservation technology transfer programs. It is a toll-free line offered to the public which provides site-specific technical and commercialization assistance on all renewable energy and energy conservation problems. This is a new program, Mr. Herrington, which opened its door last May. Such a program seems of use in relaying very helpful assistance to individual people, small businessess, local government officials. Have you heard of this program? And do you intend to continue supporting it in the coming fiscal year?

Answer: No, I look forward to learning more about it.

QUESTIONS FROM SENATOR DOMENICI

Question 22: Attached is the testimony presented by the Environmental Policy Institute at this morning's hearing. In their testimony they make several allegations concerning the Department of Energy's practices relating to DOE Research and Development Programs; Occupational Health and Safety regulations; compliance with environmental regulations and laws; and the willingness of DOE to respond to the concerns of the States and the Indian Tribes concerning guidelines for the disposal of nuclear waste.

Would you please respond to these allegations?

Answer: DOE RESEARCH & DEVELOPMENT PROGRAMS

The National Energy Policy Plan considers conservation to be an important part of the balanced and mixed energy resource system the Department of Energy seeks to promote. I fully support this view. I support continued funding for research and development in energy efficiency improvements. I will be reviewing all the conservation programs in detail over the next few months. I would certainly welcome constructive suggestions from environmental groups on these and other energy matters.

OCCUPATIONAL SAFETY AND HEALTH

The Department has a clear obligation to see to it that its employees and those of its contractors follow acceptable health and safety practices in the work place. I will review the concerns expressed by the Environmental Policy Institute regarding DOE's interpretation of the information resulting from radiation epidemiological studies. Until such a review has occurred, I do not have a position on the transfer of responsibility for epidemiological studies that are used to help ensure health and safety of DOE and DOE contractor employees.

COMPLIANCE WITH ENVIRONMENTAL REGULATIONS AND LAWS Compliance with Federal and State environmental laws has become an increasingly complex and dynamic responsibility. Extensive DOE programs, many of which were associated with important national defense goals, have for many years generated a variety of chemical pollutants. However, many of these were not categorized as hazardous by regulatory agencies until the Resource Conservation and Recovery Act (RCRA) regulations were promulgated. Other more recent environmental laws and regulations affecting radioactive and chemical pollution include the Safe Drinking Water Act, the Comprehensive Environmental Response Compensation and Liability Act, the Clean Air Act, the Clean Water Act, and the Toxic Substance Control Act. These may require more stringent controls by various DOE operations. believe progress has been made but that established procedures and approaches in many cases will have to be improved. It is my goal that DOE will be in compliance with all applicable requirements.

COOPERATION WITH STATES AND TRIBES ON WASTE DISPOSAL GUIDELINES I am advised that some aspects of this matter are in litigation. Therefore, I believe that it would be inappropriate for me to comment in detail at this time. However, I intend to be very sensitive to local concerns on all waste matters.

QUESTIONS FROM SENATOR WALLOP

Question 23A:	In your statement, you said the Administration's energy policy is to develop a "balanced and mixed" energy resource base -- oil, natural gas, nuclear, and so forth. Am I correctly assuming that you believe this resource base should be founded on our domestic energy supplies and industries?
Answer:	I believe that a strong domestic energy resource base must be the foundation of our energy policy. This does not mean that all international trade in energy should be eliminated, but we should strive for an energy production industry that does not leave us vulnerable to foreign energy supply distruptions.

QUESTIONS FROM SENATOR WALLOP

Question 23B: Does this resource base include our domestic uranium industry? Do you believe our domestic uranium industry has the capability, the viability, to provide the necessary resources for the industry to adequately participate in our balanced and mixed energy policy?

Answer: Yes, I believe that domestic uranium is an important part of our resource base. I have not studied the situation sufficiently to provide an answer as to the current capability or viability of the uranium industry, but I will certainly pursue that question vigorously in line with my responsibility to make an annual viability assessment.

QUESTIONS FROM SENATOR WALLOP

Question 23C:	The Department recently sent me a rather lengthy report asserting that the uranium mining and milling industry is viable for calendar year 1983. Disregarding the fact that the authors took until December of 1984 to reach that conclusion, the report reflects a vast ignorance of the situation in the uranium industry. In a November 15 letter, I indicated to Secretary Hodel that the uranium industry in Wyoming barely survived 1984, and was hardly viable back in 1983. In other words, the Department's viability report is basically hogwash. Since the Department's so-called experts on nuclear policy do not appear to understand the industry and its problems, would you be willing to appoint an independent expert to prepare a report to you directly on the current state of the uranium industry and its continued viability? A realistic review of the uranium industry would be quite useful as the Department prepares the fifth National Energy Policy Plan. It does not make sense to be preparing an energy plan for the future which is dependent on nuclear energy at the same time that our uranium industry is going out of business.
Answer:	I believe in obtaining and listening to a diversity of opinions on all major energy subjects, and I would certainly do so with respect to the state of the uranium industry. Whether there is a need for appointment of an "independent expert" is something I would examine upon taking office.

QUESTIONS FROM SENATOR WALLOP

Question 23D: Do you feel the U.S. should be dependent on foreign source uranium supplies for our nuclear industry?

Answer: I would be very concerned if this country became so dependent upon foreign source uranium supply such that it created either an energy security or national security threat.

QUESTIONS FROM SENATOR WALLOP

Question 23E: With our industry in such dire straits, do you feel it appropriate to cancel any further releases of uranium from government stockpiles?

Answer: It is my understanding that DOE has at times utilized its natural uranium stockpile for critical military needs and to optimize production at its gaseous diffusion plants. I am informed that the Department has not sold in the past, and does not plan to sell in the future, any portion of its natural uranium inventory in competition with the domestic uranium mining industry. I do intend to maintain a dialogue with the uranium mining industry regarding potential impacts of DOE's uranium enrichment policies.

QUESTIONS FROM SENATOR WALLOP

Question 23F: Lastly, would you please send a response to my November 15 letter.

Answer: I understand that this letter has been answered.

QUESTIONS FROM SENATOR WALLOP

Question 24: Mr. Herrington, are you aware that in 1979 in the United States there were 21 active uranium mills, 362 surface and underground uranium mines, and 22,000 persons employed in the uranium production industry, while at the present time there are 7 active uranium mills (2 owned by a French company and 1 by a utility), less than 15 active uranium mines, and employment in the industry is down to less than 4,000? Despite this rather pathetic situation, your predecessor found that the domestic uranium industry is "viable" in a recent statutorily mandated assessment of the industry. Without getting into whether or not it is "viable" in the sense of whatever that term may mean to DOE, the fact is the industry is on the verge of extinction. The question to you, sir, is do you believe it is important to the long-term energy self-sufficiency and the national security interests of the United States to have a domestic uranium production capability?

Answer: I am aware of the significant contraction of the uranium mining and milling industry from its peak years. I understand that the continued deferral and cancellation of nuclear powerplants have been the primary contributors to this decline. I do believe it is important to the long-term energy national security interest of the United States to have a domestic uranium production capability.

QUESTIONS FROM SENATOR WALLOP

Question 25: And if so, what kind of program do you intend to develop to carry out the responsibilities of the United States government to protect this capability and assure that it will be in existence in the future?

Answer: I shall need to review the facts surrounding the industry's circumstances and the directives provided by law to the Secretary of Energy to execute the responsibilities of the U.S. government. I assure you that I shall faithfully and responsibly carry out these provisions.

Under my responsibility to make a viability assessment, should I find the industry not to be vaiable, I will make recommendations to correct that situation.

QUESTIONS FROM SENATOR WALLOP

Question 26: Would you provide the Committee within 60 days with a proposed program to assist the domestic uranium production industry to help itself survive during the next few years until the world market for uranium comes into more normal balance? This program should include definition of the problems of the industry, an attempt to identify some basic approaches to solve the problems, the identity of responsible, high level officials to oversee and vigorously press for action on the program (officials who are not directly involved in your enrichment contract activities due to potential conflicts of interest), and a timetable within which you expect to be able to achieve the goals set forth in the program?

Answer: I cannot provide you a specific timetable for an effective program until I can survey the situation. I will promise to provide you, within 60 days of taking office, a specific report on my impressions to that point of DOE's possible actions with regard to the uranium industry.

I personally will meet with you, your staff, and representatives of the uranium industry, to see what actions the Secretary of Energy might take to assist this troubled industry.

QUESTIONS FROM SENATOR WALLOP

Question 27: One of DOE's operating scenarios for its enrichment facilities indicates that beginning in 1988 DOE will distribute from its uranium (or U-308 equivalent) stockpile approximately 30 million pounds out of inventory through use of a split tails operation under its enrichment contracts. Additionally, an analysis performed by Colorado Nuclear Corporation indicates that, under such a scenario, DOE will distribute over 100 million pounds of U-308 equivalent from its stockpile over the next 10 years. What exactly does DOE intend to do? Has DOE analyzed the potential effects of such actions on domestic uranium production?

Answer: I have been informed that the Government has a substantial inventory of natural uranium, and that the Government currently utilizes this inventory of natural uranium to supply feed for military requirements. I understand that this material can also be used to reduce the cost of operation of gaseous diffusion plants by lowering the Government's purchases of electricity. It is my understanding that DOE's policy is not to offer any of its uranium into the marketplace for direct sale in a manner that would compete with the uranium mining industry. I am mindful, however, of the need for a continued close dialogue with the mining industry to assure that their views are considered in the formulation of the Department's policies.

QUESTIONS FROM SENATOR EVANS

Intertie/Construction of 3rd AC line

Question 28: The Pacific Northwest has a substantial amount of non-firm hydropower that is available for export to California. There have been substantial sales of power of these lines since the Exportable Agreement was signed and the first line was energized in 1969. Northwest's nonfirm power helps meet the Southwest's summer peaking needs, while the Southwest's surplus power can help meet the Northwest's winter peaking needs.

a. Do you believe that there are substantial economic benefits in these exchanges of power?

Answer: From what I know of such exchanges of power, I am inclined to answer yes.

b. Will you continue your predecessor's policies to expand the capacity of the intertie capacity as you judge to be appropriate?

Answer: It is my intention to continue to look for economical enhanced opportunities for interconnections between the Pacific Northwest and California.

QUESTIONS FROM SENATOR EVANS

Question 29: A Memorandum of Understanding has recently been signed among the California participants for the conceptual plan of construction of a 3rd AC line to resolve the "bottleneck" problem at the California-Oregon border. Participants include both federal and non-federal entities. The line will be capable of delivering 1600 additional MW of capacity between the Pacific Northwest and the Southwest. The plan was submitted to Congress by Secretary Hodel on December 24, 1984, as required by language in the FY 1985 Energy and Water Development Appropriations Act (P.L. 98-360). Events seem to be proceeding in an orderly and prompt fashion towards construction of the new line.

a. Have you become familiar with the MOU among the California participants and the conceptual plan?

Answer: Generally, yes.

b. As Secretary, will you use your authority to encourage the parties to move towards construction of the line promptly?

Answer: I am advised that the parties are indeed moving towards construction promptly. The DOE has played a valuable catalyzing role in this project since its inception, by working with interested parties in both regions. I intend that the DOE would continue to provide leadership and coordination to assure timely completion.

c. Do you intend to use your statutory authority to proceed with construction of the line in the event that certain participants fail to reach a final agreement on questions such as the allocation of benefits?

Answer: I am sure that commercial arrangements will be negotiated between the PNW and PSW utilities which will accomplish an equitable distribution of the benefits all parties know are there. However, I am aware of the requirements of the law, and would certainly intend to follow the law.

QUESTIONS FROM SENATOR EVANS

Intertie/BPA's Near-Term Intertie Access Policy

Question 30: Are you familiar with Bonneville's Near-Term Intertie Access Policy that went into effect on September 7, 1984? Despite the litigation of the Los Angeles Department of Water and Power, most participants agree that the management of the line under the new policy has been orderly and efficient. From September through December, 1984, the line has been loaded to about 93% of its available capacity. Also, the pricing of that power under another change implemented by BPA has been much closer to the incremental cost of generation in the Northwest and to the Priority Firm rate charged by Bonneville. Furthermore, BPA is better able to meet its financial obligations to the U.S. Treasury for repayment of the federal investment. Bonneville plans to revise some minor parts of the policy this spring, and issue a long-term policy after the environmental assessment if finished sometime in 1986.

a. With the above in mind, do you intend to support the Bonneville Administrator's efforts to implement the new policy?

Answer: I am aware of this policy. I am advised that, in September, 1984, BPA begain operating under a new Interim Intertie Access Policy for a period of 6 months. This Interim Policy is to be followed this spring by a revised Policy which will be in effect until summer, 1986.

I would expect to support the BPA Administrator's policies for fiscal prudency in the power marketing function of this agency, including policies for management of transmission facilities such as the Intertie which are primarily federal in origin.

QUESTIONS FROM SENATOR EVANS

Question 31: Canada has criticized the new access policy, since its transmission rquests have been accorded a lower priority under the hierarchy of the new system.

a. What, in general, are your views on the importation of electricity from Canada? By what criteria should it be encouraged and discouraged?

b. How do you intend to handle a protest from the Canadian Government on this subject if it were brought to your attention within the Administration?

Answer: a. There are clearly certain benefits which may accrue to the United States from the importation of electricity from Canada. Today Canadian power is less expensive for some areas served than available domestic power, with resulting benefits for U. S. consumers. However, there is a trend toward a greater dependence on imported power in certain regions of the country. In view of the need for a strong and viable utility industry for the nation's economic future, there should be a balance between imports and domestic supply. Utilities thus should make certain that decisions to import electricity are carefully weighed with domestic alternatives.

b. I plan to maintain the close working relationship that has been established between U. S. and Canadian energy officials, which has enabled both governments to successfully deal with other energy trade issues. Every effort should be made to resolve differences in a cooperative manner, consistent with U. S. interests.

QUESTIONS FROM SENATOR EVANS

BPA's Organization

Question 32: When the Department of Energy was established in 1977 pursuant to the DOE Organization Act (USC 42.7100), the functions of the Power Marketing Administrations were transferred from Interior to Energy Departments. However, the drafters of the Act took care to ensure the responsiveness of the PMA's to their respective regions as the electric energy planner and marketing authority. Section 302 of the Act states that the PMA's "shall be preserved as separate and distinct organizational entities within the Department."

a. Can you assure the Committee that you will carefully follow this statute in your management of the PMA's?

b. Do you intend to pursue more centralized management of the PMA's in any specific areas?

Answer: You have my assurance that in exercising my overall management responsibilities for the Power Marketing Administrations, I will carefully abide by Section 302 of the Department of Energy Organization Act. I have no plans to change any management arrangement of the PMAs, though I will review the current management structure as part of my general review of DOE organization.

QUESTIONS FROM SENATOR EVANS

Regional Electric Power Planning

Question 33:	The Department of Energy opposed the regional power planning bill (H.R. 5766) that was introduced by Rep. Ottinger in the last Congress. This bill would allow regions to establish interstate compacts to draft least-cost plans similar to those drafted by the Northwest Power Planning Council.
a.	Have the views of the Department towards this bill, or that concept, changed during the past 6 months?
b.	More generally, what role do you envisage for states and/or multi-state compacts in the development and implementation of this nation's overall energy programs (please refer to Natl Energy Policy Plan).
c.	What sections of the bill do you find most objectionable? Could the bill be modified in such a way as to gain the support of the Department?
Answer:	My understanding is that the Department's objections to this bill were based on concerns that the regional authorities proposed were additive to existing authorities at other levels of government, and as such threatened to further complicate the regulatory maze that already faces the electric power industry. It is unlikely that the solution to the complex problems facing our nation's electric power industry lies in the creation of additional layers of regulation.

I have not yet had time to develop my position on this particular bill or other measures that have been proposed to deal with the long term problems of our electric power industry. However, as I address these issues, the policy principle that will guide my considerations will be to rely on the use of increased market discipline, rather than increased regulation, wherever possible.

QUESTIONS FROM SENATOR EVANS

Hydrogen

Question 34: In the FY 1985 Energy and Water Development Appropriations Act, it is my understanding that about $500,000 was allocated for research into production technologies for hydrogen energy.

a. How have these funds been allocated and expended (department functions, laboratory responsibility, etc.)?

b. What role does the Department think that hydrogen should play in our Nation's "balanced" energy mix outlined in NEPP-IV?

c. What specific problems does the Department see that restrict the wider utilization of hydrogen energy (production costs, transportation or storage, no end-users)? Please rank as best you can in their order of difficulty.

Answer: a. It is my understanding that the Department of Energy will allocate these funds in accordance with the provisions of the FY 1985 Energy and Water Development Appropriations Act. I am advised that the Department is currently working with the Solar Energy Research Institute toward that end.

b. Hydrogen, like all other energy options, has a place in our Nation's "balanced and mixed" energy future. Its precise role, however, is largely determined by economics, environmental, and safety considerations. Its apparent high cost now restricts its use as a significant energy option.

c. In a related area, using different funds, DOE is continuing hydrogen research to study the principal technological barriers. DOE is focusing on problems associated with the generation, storage, and transmission of hydrogen, in that order of priority.

QUESTIONS FROM SENATOR EVANS

BPA's Fish and Wildlife Program

Question 35: Will you support the efforts of BPA pursuant to Congressional directive and the Northwest Power Planning Council's Fish and Wildlife Program for the Columbia River basin to restore fish and wildlife resources that have been damaged by the federal hydroelectric facilities?

Answer: I am informed that the BPA Administrator has expressed a firm commitment to the protection and enhancement of fish and wildlife in the Pacific Northwest consistent with the provisions of Public Law 96-501. I believe that the relationship between BPA and the Council is working well and I hope it continues.

QUESTIONS FROM SENATOR EVANS

BPA's Fish and Wildlife Program

Question 36: Will you direct the BPA Administrator, if necessary, to follow the statutes and Congressional directive relevant to fish and wildlife mitigation in the Columbia River basin, and encourage Bonneville's continued cooperation with the Northwest Power Planning Council to the maximum extent possible?

Answer: It is my understanding that the BPA Administrator is executing his responsibilities consistent with the Pacific Northwest Power Planning and Conservation Act (P.L. 96-501) and has been responsive to Congress' intent. I believe that BPA is cooperating appropriately with the Power Council in the fish and wildlife area and I will, of course, continue to encourage and support such efforts.

QUESTIONS FROM SENATOR JOHNSTON

Natural Gas

Question 37A: The Administration is clearly on record in favor of complete deregulation of natural gas prices. Under the Natural Gas Policy Act (NGPA), approximately 50% of flowing gas was deregulated January 1, 1985. Another 5% had already been deregulated. An additional 15-20% is deregulated for all practical purposes because the maximum lawful prices allowed by law exceed the market price for that gas.

Does the Administration intend to send us natural gas deregulation legislation again this Congress? If so, when? If not, why not?

Answer: I firmly believe in the ultimate deregulation of the production of all natural gas in the United States. I am also concerned that the natural gas transportation system be sufficiently flexible and competitive to allow the economical marketing of all gas that is economically available in the United States.

The Department of Energy will be appearing before the Federal Energy Regulatory Commission in the near future in support of these objectives. I believe that an ultimate decision on the submission of legislation should await a few months of experience in the post-decontrol environment. The obvious and continuing success of that policy should make it easier to secure Congressional support of any legislative effort.

While no final decision will be made until that time, I believe that natural gas legislation will ultimately be necessary to secure the full benefits of decontrol for America.

QUESTIONS FROM SENATOR JOHNSTON

Natural Gas

Question 37B: Does the Administration intend to send us legislation to repeal the incremental pricing requirements of the NGPA? If so, when? If not, why not?

Answer: Incremental pricing represents a substantial interference with the ability of American consumers to make their own fuel choices. I believe the incremental pricing provisions of the Natural Gas Policy Act should be repealed as part of a comprehensive natural gas proposal.

QUESTIONS FROM SENATOR JOHNSTON

Natural Gas

Question 37C: Does the Administration intend to send us legislation to repeal or amend the Powerplant and Industrial Fuel Use Act? If so, when? If not, why not?

Answer: The Fuel Use Act also represents a substantial interference with the ability of American consumers to make their own choices as to the best type of fuel to use for current and future applications. At the same time, many of the counterproductive effects of the Act have been removed by repeal of the so-called "off-gas" provisions and by administrative changes in 1981. I believe the Fuel Use Act should be repealed as part of a comprehensive natural gas proposal.

QUESTIONS FROM SENATOR JOHNSTON

International Energy Agency

Question 38A:	United States participation in the International Energy Agency (IEA) is authorized by Secs. 251-255 of the Energy Policy and Conservation Act (EPCA). That authorization expires June 30, 1985. The Administration has expressed its support for the international energy program in years past. Presumably the Administration continues to believe in the efficacy of our IEA participation. You said that the Administration is reviewing the issue of whether to submit legislation to authorize our continued participation in the IEA. When will that review be concluded?
Answer:	The review of the United States participation in the International Energy Program is part of the Administration's overall review of the expiring authorities in the Energy Conservation and Policy Act (EPCA). Recognizing that many of the EPCA authorities expire on June 30, 1985, the review will be concluded well before that date.

QUESTIONS FROM SENATOR JOHNSTON

International Energy Agency

Question 38B:	Have the IEA members agreed upon an extension of the "Agreement on an International Energy Program," establishing the IEA and implementing the International Energy Program? (Please provide a detailed status report on any negotiations among the IEA members pertaining to the Agreement on an International Energy Program.)
Answer:	I am informed that in May 1983 the Governing Board meeting at Ministerial level reconfirmed the commitment of the IEA member countries to the IEP. At that time, member countries agreed upon strong policies to improve energy security and mitigate the effects of disruption. These policies fall into two categories: (a) long term policies to improve the energy position of OECD countries; and (b) contingency plans to limit the effects of interruptions of supply. I am further informed that the IEP Agreement remains in force indefinitely, unless terminated by participating countries.

QUESTIONS FROM SENATOR JOHNSTON

Nuclear Waste Policy Act

Question 39A: On September 7, 1984, Secretary Hodel wrote to Senator Johnston about the Department's obligation to accept spent nuclear fuel from utilities beginning no later than January 31, 1998, the target date for such acceptance under section 305(a)(5) of the Nuclear Waste Policy Act of 1982.

In the letter Secretary Hodel stated, among other things, that the Department has a "firm commitment" to accept spent nuclear fuel from the utilities by the January 31, 1998, date and that "it is my intention that this commitment in the contracts (with utilities for fuel acceptance), together wtih the overall thrust of the Act, will create an obligation for the Department to accept spent fuel in 1998 whether or not a repository is in operation."

It is my understanding that the contracts DOE has with the utilities have not been modified to incorporate this obligation. The utilities pay several hundred million dollars a year to DOE for this program. The assurance that the spent fuel in question will in fact be accepted is very important to the credibility of the program.

What is the status of the Department's effort to modify these spent fuel acceptance contracts? When will this obligation be explicit in all of these contracts?

Answer: I have been informed that the Department has been examining the means and substance of making its commitment to acceptance of spent fuel by January 31, 1998, a more explicit obligation under the terms of its existing standard waste disposal contracts with nuclear utilities. This effort has not been completed and I am not in a position at this time to indicate when it will be. We have a strong commitment to receive fuel by 1998 in a safe and acceptable manner.

QUESTIONS FROM SENATOR JOHNSTON

Nuclear Waste Policy Act

Question 39B: Under section 8(b) of the Nuclear Waste Policy Act of 1982 the President is supposed to make an evaluation of the use of repositories under the Act for disposal of high-level radioactive waste resulting from atomic energy defense activities. This evaluation was due on January 7, 1985.

Please provide the Committee with a status report on this evaluation including a description of the options being considered for allocating an appropriate portion of the costs of the program under the Act to the Federal government.

Answer: I am informed that the Assistant Secretary for Defense Programs has drafted a report entitled *An Evaluation of Commercial Repository Capacity for the Disposal of Defense High-Level Waste*. This draft report was made available for public review and comment in July, 1984. We expect to forward it to the President shortly for his evaluation.

I am told that the Department has concluded that disposing of defense waste in one or more commercial repositories rather than a separate repository for defense-only waste is more cost efficient. However, the Department has not yet developed options for consideration on allocating appropriate costs to the Federal government.

QUESTIONS FROM SENATOR JOHNSTON

Nuclear Waste Policy Act

Question 39C: Please provide the Committee with a reactor-by-reactor analysis of the capacity for onsite spent fuel storage, both in and outside of existing reactor basins? This should answer two questions for each reactor now operating or under construction:

1) What is the estimated maximum storage capacity of the existing reactor basins (in number of fuel assemblies and metric tons), taking into account the potential for high density storage using maximum feasible reracking and considering the physical limits (seismic considerations and load-bearing capacity) on the mass of spent fuel that can be placed in the pool. Combine the capacity estimates with projected reactor discharges to project the timing and amount of spent fuel that will require out-of-basin storage for each reactor, including a sensitivity analysis of the effects of possible increased fuel burnups. Estimate the discounted present value of providing that maximum in-basin capacity for all reactors according to the projected schedule of need.

2) What is the estimated maximum capacity for onsite out-of-basin storage for each reactor, using both modular storage systems (casks, dry-wells, silos) and high-density systems (new basins or dry vaults)? Using the results of (a), project the timing and amount of spent fuel that will physically require offsite storage for each reactor. Estimate the discounted present value of providing the required onsite out-of-basin storage for each reactor according to the projected schedule.

Answer:	The Office of Civilian Radioactive Waste Management informs me that estimates, on a reactor-by-reactor basis, of the maximum storage capacity and projected out-of-basin storage requirement of existing reactor basins assuming maximum feasible reracking are currently available. However, limitations due to seismic considerations and load bearing capacity of the basins have not been factored into these data. These estimates will be sent to the Committee within the next few weeks. Estimates of the discounted present value of providing maximum in-basin capacity and required out-of-basin storage for all reactors, including a sensitivity analysis of the effect of possible increased fuel burnup, will require two months to prepare and will then be furnished to the Committee.

Department of Energy
Washington, D.C. 20585

March 4, 1985

Honorable James A. McClure
Chairman, Committee on Energy
and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

On January 31, 1985, Secretary John S. Herrington appeared before your Committee for his confirmation hearing.

Following that hearing, you submitted written questions for response on behalf of Committee members. On February 4, 1985, the written answers were provided to you. In the response to Question 39C, from Senator Johnston, we indicated that certain information would be forthcoming within a few weeks. That information is enclosed. Please note that further supplementary information will be provided at a later date as indicated in the original response.

If you have any questions, please call Cathy Hamilton of my staff on 252-4277. She will be happy to assist you.

Sincerely,

Robert G. Rabben
Assistant General Counsel
for Legislation

Enclosure

QUESTIONS FROM SENATOR JOHNSTON

Nuclear Waste Policy Act

Question 39C: Please provide the Committee with a reactor-by-reactor analysis of the capacity for onsite spent fuel storage, both in and outside of existing reactor basins? This should answer two questions for each reactor now operating or under construction:

1) What is the estimated maximum storage capacity of the existing reactor basins (in number of fuel assemblies and metric tons), taking into account the potential for high density storage using maximum feasible reracking and considering the physical limits (seismic considerations and load-bearing capacity) on the mass of spent fuel that can be placed in the pool. Combine the capacity estimates with projected reactor discharges to project the timing and amount of spent fuel that will require out-of-basin storage for each reactor, including a sensitivity analysis of the effects of possible increased fuel burnups. Estimate the discounted present value of providing that maximum in-basin capacity for all reactors according to the projected schedule of need.

2) What is the estimated maximum capacity for onsite out-of-basin storage for each reactor, using both modular storage systems (casks, drywells, silos) and high-density systems (new basins or dry vaults)? Using the results of (1), project the timing and amount of spent fuel that will physically require offsite storage for each reactor. Estimate the discounted present value of providing the required onsite out-of-basin storage for each reactor according to the projected schedule.

Answer: Attachment 1 provides a discussion and data which show reactor pool capacities and projected out-of-basin storage requirements on a reactor-by-reactor basis, by year, starting in 1984 and ending in 1997. The six tables included are as follows:

Table 1 - Annual Requirements Based on Current Pool Capacity

Table 2 - Cumulative Requirements Based on Current Pool Capacity

Table 3 - Annual Requirements Based on Current Capacity Plus Planned Pool Expansions

Table 4 - Cumulative Requirements Based on Current Capacity Plus Planned Pool Expansions

Table 5 - Annual Requirements Based on Maximum Pool Capacity

Table 6 - Cumulative Requirements Based on Maximum Pool Capacity

The maximum capacity case is based on the maximum capacity reported by the utilities. These capacities may not be the actual maximum capacities since in most cases the detailed structural and seismic analyses have not been completed. Fuel Core Reserve (FCR) is maintained.

All data is based on the information obtained from the utilities effective December 31, 1983 as modfied to track the DOE-EIA projections for installed capacity and electrical energy generation under the Middle Case scenario.

Attachment 2 provides a discussion and the results of a sensitivity analysis of the effect of possible increased fuel burnup on spent fuel discharges from 1955 through the year 2020.

Attachment 1

DISCUSSION ON BASIS FOR STORAGE CAPACITIES AT REACTOR SITES

DISCUSSION ON BASIS FOR STORAGE CAPACITIES AT REACTOR SITES

Projected additional storage requirements have been calculated on a reactor-by-reactor basis for the time period 1984-1997. These calculations were performed in a similar manner to those previously reported in the Spent Fuel Storage Requirements Report (DOE 1984). One change from the reference was to combine reactors which share common storage. Thus, for example, Surry-1&2 replaces multiple entries for Surry-1 and Surry-2.

The data presented here are based on historical records of spent fuel discharges, inventories, and shipments as of the end of December 1983. The data also include modified utility estimates, as of December 1983, of plans for future nuclear plant operations and spent fuel discharges. Modifications were made to adjust the projected discharge quantities of each individual reactor so that the aggregate of all reactors matches the Department of Energy's Energy Information Administration (DOE-EIA) estimates for installed nuclear capacity and annual electrical energy generation (Gielecki 1984). This adjustment results in a reduction of storage requirements compared to the utility forecasts.

The attached tables show the additional annual and cumulative storage requirements based on three assumptions for storage pool capacity. The first assumption is that the current capacity (as of December 31, 1983) remains the maximum capacity. This case is shown in Tables 1 and 2. The second scenario assumed that expansions to the pool capacity planned by the utilities occur on the utility's anticipated schedule. This case is shown in Tables 3 and 4. Note that once fuel is assumed to be shipped to additional storage, that it does not return to the pool after a planned expansion. The final case assumes that the pools are expanded to the maximum capacity each utility believes its pools can hold. This may or may not be the actual maximum capacity of the pool. This scenario is shown in Tables 5 and 6.

Not all of the pools have been evaluated to determine the actual maximum storage capacity. Pool expansions require that analyses be performed for criticality and for structural and seismic loadings; it is impossible to predict the actual maximum capacity without these analyses.

Several utilities are investigating the possibility of increasing existing pool storage capacity by using rod consolidation. Although this technique could increase the maximum pool storage capacity be a factor of 1.5 to 2 above that using current technology, no pools have been licensed to store consolidated spent fuel to expand their capacity, and the structural and seismic constraints have not been evaluated.

The following conditions were assumed in the analysis:

1. Reactor operating cycles, discharge rates, startup dates, operating lifetimes and pool capacities were assumed to be as specified by the utilities as of the end of calendar year 1983 and as modified to match DOE-EIA projections for installed capacity and electrical energy generation.
2. FCR is assumed to be maintained for each reactor. A single FCR is assumed to be maintained for all units at multiple-unit reactor stations employing either a single common spent fuel storage pool, or separate pools with interconnections allowing spent fuel transfer between them. Multiple units on a single site with individual, unconnected pools are assumed to maintain FCR for each unit (except for Southern California Edison, which intends to maintain only a single FCR at the three San Onofre units).
3. For the maximum capacity case, all licensable actions to increase storage capacity at reactor sites are assumed to be taken. Thus, if a utility indicates that the maximum pool capacity is larger than that currently licensed, the larger pool capacity is used in this analysis. No allowance is made for additional capacity using rod consolidation techniques.
4. Offsite transshipment of spent fuel is not assumed to take place, except in those cases currently licensed by the NRC. Onsite transfers will cocur as planned; additional onsite transfers will occur, if necessary, at reactor sites where such transfers have taken place in the past.

References

U.S. Department of Energy (DOE). May 1984. Spent Fuel Storage Requirements - An Update of DOE/RL-83-1. DOE/RL-84-1, U.S. Department of Energy, Washington, DC.

Gielecki, Mark, et al. November 1984. Commercial Nuclear Power 1984: Prospects for the United States and the World. DOE/EIA-0438(84), U.S. Department of Energy, Energy Information Administration, Washington, DC.

Table 1

CURRENT AT-REACTOR CAPACITY - PROJECTED ANNUAL STORAGE REQUIREMENTS

REACTOR NAME	UTILITY NAME	CURRENT BASIN STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
		ASSEMBLIES	MTIHM	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
BRUNSWICK-2	CAROLINA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BRUNSWICK-1	CAROLINA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CONNECTICUT YANKEE	NORTHEAST UTILITIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BIG ROCK POINT	CONSUMERS POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NINE MILE POINT-1	NIAGARA MOHAWK POWER CORPORATION	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VERMONT YANKEE	VERMONT YANKEE NUCLEAR POWER CORP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCONEE-3	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OYSTER CREEK	JERSEY CENTRAL POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAINE YANKEE	MAINE YANKEE ATOMIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
YANKEE	YANKEE ATOMIC ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ARKANSAS NUCL ONE-1	ARKANSAS POWER AND LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TURKEY POINT-3	FLORIDA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MILLSTONE-2	NORTHEAST UTILITIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CALVERT CLIFFS-1&2	BALTIMORE GAS AND ELECTRIC CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PILGRIM-1	BOSTON EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PALISADES	CONSUMERS POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TURKEY POINT-4	FLORIDA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ST. LUCIE-1	FLORIDA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MILLSTONE-1	NORTHEAST UTILITIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FORT CALHOUN-1	OMAHA PUBLIC POWER DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DIABLO CANYON-2	PACIFIC GAS AND ELECTRIC CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DIABLO CANYON-1	PACIFIC GAS AND ELECTRIC CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RANCHO SECO-1	SACRAMENTO MUNICIPAL UTILITY DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SURRY-1&2	VIRGINIA ELECTRIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ARKANSAS NUCL ONE-2	ARKANSAS POWER AND LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PEACH BOTTOM-2	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PEACH BOTTOM-3	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TROJAN	PORTLAND GENERAL ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
QUAD CITIES-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MC GUIRE-1	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GRAND GULF-1	MISSISSIPPI POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ROBINSON-2	CAROLINA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LA SALLE-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PRAIRIE ISLAND-1&2	NORTHERN STATES POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
HOPE CREEK-1	PUBLIC SERVICE ELECTRIC AND GAS CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NORTH ANNA-1&2	VIRGINIA ELECTRIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
KEWAUNEE	WISCONSIN PUBLIC SERVICE CORPORATION	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FARLEY-1	ALABAMA POWER CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LA CROSSE	DAIRYLAND POWER COOPERATIVE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCONEE-1&2	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MC GUIRE-2	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CRYSTAL RIVER-3	FLORIDA POWER CORPORATION	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MONTICELLO	NORTHERN STATES POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GINNA	ROCHESTER GAS AND ELECTRIC CORP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DRESDEN-2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
THREE MILE ISLAND-1	GPU NUCLEAR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FITZPATRICK	POWER AUTH. OF STATE OF NY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PALO VERDE-1	ARIZONA PUBLIC SERVICE CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CURRENT AT-REACTOR CAPACITY - PROJECTED ANNUAL STORAGE REQUIREMENTS

REACTOR NAME	UTILITY NAME	CURRENT BASIS STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
		ASSEMBLIES	MTIHM	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
PALO VERDE-1	ARIZONA PUBLIC SERVICE CO	443	383	0	0	0	0	0	0	0	0	0	0	18	37	33	30	0	0	0	0	0	0	0	0	0	0	8	15	14	13
DRESDEN-3	COMMONWEALTH EDISON COMPANY	1000	310	0	0	0	0	0	0	0	0	0	0	80	102	0	100	0	0	0	0	0	0	0	0	0	0	14	18	0	18
INDIAN POINT-2	CONSOLIDATED EDISON CO OF NEW YORK	980	401	0	0	0	0	0	0	0	0	0	0	18	0	43	44	0	0	0	0	0	0	0	0	0	0	8	0	20	20
COOPER	NEBRASKA PUBLIC POWER DISTRICT	2366	433	0	0	0	0	0	0	0	0	0	0	57	102	102	102	0	0	0	0	0	0	0	0	0	0	10	18	18	18
SEQUOYAH-1&2	TENNESSEE VALLEY AUTHORITY	1386	637	0	0	0	0	0	0	0	0	0	0	0	75	75	133	0	0	0	0	0	0	0	0	0	0	0	33	33	60
PALO VERDE-2	ARIZONA PUBLIC SERVICE CO	665	283	0	0	0	0	0	0	0	0	0	0	0	33	36	59	0	0	0	0	0	0	0	0	0	0	0	13	15	24
BYRON-1&2	COMMONWEALTH EDISON COMPANY	1050	460	0	0	0	0	0	0	0	0	0	0	0	38	104	104	0	0	0	0	0	0	0	0	0	0	0	16	45	45
ST LUCIE-2	FLORIDA POWER AND LIGHT CO	675	256	0	0	0	0	0	0	0	0	0	0	0	44	79	0	0	0	0	0	0	0	0	0	0	0	0	17	30	0
LIMERICK-1	PHILADELPHIA ELECTRIC COMPANY	2040	371	0	0	0	0	0	0	0	0	0	0	0	177	0	224	0	0	0	0	0	0	0	0	0	0	0	32	0	41
INDIAN POINT-3	POWER AUTH OF THE ST OF NY	840	383	0	0	0	0	0	0	0	0	0	0	0	36	0	49	0	0	0	0	0	0	0	0	0	0	0	16	0	22
COMANCHE PEAK-1&2	TEXAS UTILITIES GENERATING COMPANY	1116	510	0	0	0	0	0	0	0	0	0	0	0	63	116	117	0	0	0	0	0	0	0	0	0	0	0	25	47	47
DAVIS-BESSE-1	TOLEDO EDISON COMPANY	735	344	0	0	0	0	0	0	0	0	0	0	0	43	45	0	0	0	0	0	0	0	0	0	0	0	0	20	21	0
POINT BEACH-1&2	WISCONSIN ELECTRIC POWER COMPANY	1502	601	0	0	0	0	0	0	0	0	0	0	0	30	63	63	0	0	0	0	0	0	0	0	0	0	0	7	28	28
ZION-1&2	COMMONWEALTH EDISON COMPANY	2079	954	0	0	0	0	0	0	0	0	0	0	0	0	40	80	0	0	0	0	0	0	0	0	0	0	0	0	18	36
BEAVER VALLEY-1	DUQUESNE LIGHT COMPANY	833	384	0	0	0	0	0	0	0	0	0	0	0	0	47	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0
D C COOK-1&2	INDIANA & MICHIGAN ELECTRIC CO	2050	907	0	0	0	0	0	0	0	0	0	0	0	0	108	153	0	0	0	0	0	0	0	0	0	0	0	0	48	66
BRAIDWOOD-1&2	COMMONWEALTH EDISON COMPANY	1050	444	0	0	0	0	0	0	0	0	0	0	0	0	0	66	0	0	0	0	0	0	0	0	0	0	0	0	0	27
WNP-2	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	2658	480	0	0	0	0	0	0	0	0	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	7
FARLEY-2	ALABAMA POWER CO	1407	644	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARRIS -1	CAROLINA POWER AND LIGHT	1513	696	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERRY-1&2	CLEVELAND ELECTRIC ILLUMINATING COMPANY	4020	736	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DRESDEN-1	COMMONWEALTH EDISON COMPANY	720	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-1	CONSOLIDATED EDISON CO OF NEW YORK	756	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIDLAND-1&2	CONSUMERS POWER COMPANY	1030	488	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FERMI-2	DETROIT EDISON COMPANY	2385	430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-1	DUKE POWER COMPANY	1418	634	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-2	DUKE POWER COMPANY	1418	630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEAVER VALLEY-2	DUQUESNE LIGHT COMPANY	1088	501	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HATCH-1&2	GEORGIA POWER COMPANY	5744	1008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOGTLE-1&2	GEORGIA POWER COMPANY	1873	863	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIVER BEND-1	GULF STATES UTILITIES	3172	580	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CLINTON-1	ILLINOIS POWER COMPANY	3672	669	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUANE ARNOLD	IOWA ELECTRIC LIGHT AND POWER CO	2050	377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WOLF CREEK	KANSAS GAS AND ELECTRIC COMPANY	1340	618	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHOREHAM	LONG ISLAND LIGHTING COMPANY	2176	396	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATERFORD-3	LOUISIANA POWER AND LIGHT	1080	443	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND GULF-1	MISSISSIPPI POWER AND LIGHT CO	4544	831	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NINE MILE POINT-2	NIAGARA MOHAWK POWER CORPORATION	4049	737	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MILLSTONE-3	NORTHEAST UTILITIES	756	349	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUMBOLDT BAY	PACIFIC GAS AND ELECTRIC CO	400	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUSQUEHANNA-1&2	PENNSYLVANIA POWER AND LIGHT CO	5688	1039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIMERICK-2	PHILADELPHIA ELECTRIC COMPANY	2040	371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEABROOK-1	PUBLIC SERVICE CO OF NEW HAMPSHIRE	1236	568	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEABROOK-2	PUBLIC SERVICE CO OF NEW HAMPSHIRE	1236	568	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-1	PUBLIC SERVICE ELECTRIC AND GAS CO	1170	540	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-2	PUBLIC SERVICE ELECTRIC AND GAS CO	1170	537	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUMMER	SOUTH CAROLINA ELECTRIC AND GAS CO	672	311	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN ONOFRE-1,2,&3	SOUTHERN CALIFORNIA EDISON COMPANY	1816	672	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH TEXAS PROJ-1	HOUSTON LIGHTING AND POWER COMPANY	720	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CURRENT AT-REACTOR CAPACITY - PROJECTED ANNUAL STORAGE REQUIREMENTS

REACTOR NAME	UTILITY NAME	CURRENT BASIN STORAGE CAPACITY ASSEMBLIES	CURRENT BASIN STORAGE CAPACITY MTIHM	ASSEMBLIES 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	METRIC TONS 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
SOUTH TEXAS PROJ-2	HOUSTON LIGHTING AND POWER COMPANY	724	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-1&2	TENNESSEE VALLEY AUTHORITY	6942	1263	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-3	TENNESSEE VALLEY AUTHORITY	3471	632	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATTS BAR-1&2	TENNESSEE VALLEY AUTHORITY	1312	605	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELLEFONTE-1	TENNESSEE VALLEY AUTHORITY	1058	492	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELLEFONTE-2	TENNESSEE VALLEY AUTHORITY	1030	482	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARTSVILLE-A1	TENNESSEE VALLEY AUTHORITY	2040	371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARTSVILLE-A2	TENNESSEE VALLEY AUTHORITY	2040	371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-1	TENNESSEE VALLEY AUTHORITY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-2	TENNESSEE VALLEY AUTHORITY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY-1	UNION ELECTRIC COMPANY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-1	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	1070	492	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-3	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	1120	461	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-2 PWR POOL	CAROLINA POWER AND LIGHT COMPANY	144	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-1 PWR POOL	CAROLINA POWER AND LIGHT COMPANY	160	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-BWR	MORRIS FUEL STORAGE FACILITY	3133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-PWR	MORRIS FUEL STORAGE FACILITY	707	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-BWR	WEST VALLEY NUCLEAR FUEL SERVICES	841	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-PWR	WEST VALLEY NUCLEAR FUEL SERVICES	399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SUBTOTALS BY REACTOR TYPE AND TOTALS

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
PWR ASSEMBLY	30	193	303	394	776	641	932	1133	1267	1303	1517	1773	2292	2401
PWR MT. TONS	12	79	35	157	331	270	395	403	342	359	608	766	974	1060
BWR ASSEMBLY	306	267	500	608	649	995	1304	2225	1491	1996	2843	1856	3623	2891
BWR MT. TONS	92	47	93	108	116	180	234	401	266	360	313	333	671	320
TOTAL ASSEMBLY	336	460	790	1002	1425	1636	2236	3358	2758	3301	4360	3649	4917	5372
TOTAL MT. TONS	104	125	127	264	437	450	630	802	607	718	1160	1108	1443	1380

Table 2

CURRENT AT-REACTOR CAPACITY - PROJECTED CUMULATIVE STORAGE REQUIREMENTS

				ASSEMBLIES														METRIC TONS													
REACTOR NAME	UTILITY NAME	ASSEMBLIES	MTHM	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
BRUNSWICK-2	CAROLINA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BRUNSWICK-1	CAROLINA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CONNECTICUT YANKEE	NORTHEAST UTILITIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BIG ROCK POINT	CONSUMERS POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NINE MILE POINT-1	NIAGARA MOHAWK POWER CORPORATION	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VERMONT YANKEE	VERMONT YANKEE NUCLEAR POWER CORP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCONEE-3	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OYSTER CREEK	JERSEY CENTRAL POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAINE YANKEE	MAINE YANKEE ATOMIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
YANKEE	YANKEE ATOMIC ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ARKANSAS NUCL ONE-1	ARKANSAS POWER AND LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TURKEY POINT-3	FLORIDA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MILLSTONE-2	NORTHEAST UTILITIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CALVERT CLIFFS-1&2	BALTIMORE GAS AND ELECTRIC CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PILGRIM-1	BOSTON EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PALISADES	CONSUMERS POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TURKEY POINT-4	FLORIDA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ST LUCIE-1	FLORIDA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MILLSTONE-1	NORTHEAST UTILITIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FORT CALHOUN-1	OMAHA PUBLIC POWER DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DIABLO CANYON-2	PACIFIC GAS AND ELECTRIC CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DIABLO CANYON-1	PACIFIC GAS AND ELECTRIC CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RANCHO SECO-1	SACRAMENTO MUNICIPAL UTILITY DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SURRY-1&2	VIRGINIA ELECTRIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ARKANSAS NUCL ONE-2	ARKANSAS POWER AND LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PEACH BOTTOM-2	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PEACH BOTTOM-3	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TROJAN	PORTLAND GENERAL ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
QUAD CITIES-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MC GUIRE-1	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GRAND GULF-1	MISSISSIPPI POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ROBINSON-2	CAROLINA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LA SALLE-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PRAIRIE ISLAND-1&2	NORTHERN STATES POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
HOPE CREEK-1	PUBLIC SERVICE ELECTRIC AND GAS CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NORTH ANNA-1&2	VIRGINIA ELECTRIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
KEWAUNEE	WISCONSIN PUBLIC SERVICE CORPORATION	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FARLEY-1	ALABAMA POWER CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LA CROSSE	DAIRYLAND POWER COOPERATIVE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCONEE-1&2	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MC GUIRE-2	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CRYSTAL RIVER-3	FLORIDA POWER CORPORATION	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MONTICELLO	NORTHERN STATES POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GINNA	ROCHESTER GAS AND ELECTRIC CORP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DRESDEN-2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
THREE MILE ISLAND-1	GPU NUCLEAR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FITZPATRICK	POWER AUTH. OF STATE OF NY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PALO VERDE-1	ARIZONA PUBLIC SERVICE CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CURRENT AT-REACTOR CAPACITY - PROJECTED CUMULATIVE STORAGE SHORTFALLS

				ASSEMBLIES														METRIC TONS													
REACTOR NAME	UTILITY NAME	ASSEMBLIES	STORED	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
PALO VERDE-2	ARIZONA PUBLIC SERVICE CO	645	280	0	0	0	0	0	0	0	0	0	0	10	67	185	188	0	0	0	0	0	0	0	0	0	0	4	29	80	80
DRESDEN-3	COMMONWEALTH EDISON COMPANY	3000	510	0	0	0	0	0	0	0	0	0	0	88	330	330	370	0	0	0	0	0	0	0	0	0	0	16	61	61	67
INDIAN POINT-2	CONSOLIDATED EDISON CO. OF NEW YORK	780	441	0	0	0	0	0	0	0	0	0	0	10	10	83	109	0	0	0	0	0	0	0	0	0	0	4	4	36	48
COOPER	NEBRASKA PUBLIC POWER DISTRICT	2366	433	0	0	0	0	0	0	0	0	0	0	57	137	161	263	0	0	0	0	0	0	0	0	0	0	10	25	30	48
SEQUOYAH-1&2	TENNESSEE VALLEY AUTHORITY	1386	639	0	0	0	0	0	0	0	0	0	0	8	83	130	310	0	0	0	0	0	0	0	0	0	0	4	37	58	138
PALO VERDE-3	ARIZONA PUBLIC SERVICE CO	663	283	0	0	0	0	0	0	0	0	0	0	0	53	111	170	0	0	0	0	0	0	0	0	0	0	0	23	48	74
BYRON-1&2	COMMONWEALTH EDISON COMPANY	1030	600	0	0	0	0	0	0	0	0	0	0	0	38	100	204	0	0	0	0	0	0	0	0	0	0	0	14	37	105
ST. LUCIE-2	FLORIDA POWER AND LIGHT CO.	675	256	0	0	0	0	0	0	0	0	0	0	0	40	133	133	0	0	0	0	0	0	0	0	0	0	0	17	57	57
LIMERICK-1	PHILADELPHIA ELECTRIC COMPANY	2010	371	0	0	0	0	0	0	0	0	0	0	0	177	177	401	0	0	0	0	0	0	0	0	0	0	0	32	32	73
INDIAN POINT-3	POWER AUTH. OF THE ST. OF NY	840	383	0	0	0	0	0	0	0	0	0	0	0	36	36	103	0	0	0	0	0	0	0	0	0	0	0	16	16	46
COMANCHE PEAK-1&2	TEXAS UTILITIES GENERATING COMPANY	1116	514	0	0	0	0	0	0	0	0	0	0	0	63	177	256	0	0	0	0	0	0	0	0	0	0	0	25	75	119
DAVIS-BESSE-1	TOLEDO EDISON COMPANY	735	300	0	0	0	0	0	0	0	0	0	0	0	42	88	88	0	0	0	0	0	0	0	0	0	0	0	20	41	41
POINT BEACH-1&2	WISCONSIN ELECTRIC POWER COMPANY	1502	683	0	0	0	0	0	0	0	0	0	0	0	38	63	144	0	0	0	0	0	0	0	0	0	0	0	7	29	56
ZION-1&2	COMMONWEALTH EDISON COMPANY	1877	750	0	0	0	0	0	0	0	0	0	0	0	0	60	108	0	0	0	0	0	0	0	0	0	0	0	0	16	39
BEAVER VALLEY-1	DUQUESNE LIGHT COMPANY	833	380	0	0	0	0	0	0	0	0	0	0	0	0	67	67	0	0	0	0	0	0	0	0	0	0	0	0	31	31
D C COOK-1&2	INDIANA & MICHIGAN ELECTRIC CO.	1840	987	0	0	0	0	0	0	0	0	0	0	0	0	140	293	0	0	0	0	0	0	0	0	0	0	0	0	64	134
BRAIDWOOD-1&2	COMMONWEALTH EDISON COMPANY	1030	444	0	0	0	0	0	0	0	0	0	0	0	0	0	84	0	0	0	0	0	0	0	0	0	0	0	0	0	37
WNP-2	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	2658	484	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	5
FARLEY-2	ALABAMA POWER CO	1407	644	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARRIS -1	CAROLINA POWER AND LIGHT	1512	696	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERRY-1&2	CLEVELAND ELECTRIC ILLUMINATING COMPANY	4020	736	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DRESDEN-1	COMMONWEALTH EDISON COMPANY	750	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-1	CONSOLIDATED EDISON CO. OF NEW YORK	754	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIDLAND-1&2	CONSUMERS POWER COMPANY	1650	400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FERMI-2	DETROIT EDISON COMPANY	2383	400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-1	DUKE POWER COMPANY	1418	630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-2	DUKE POWER COMPANY	1418	630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEAVER VALLEY-2	DUQUESNE LIGHT COMPANY	1088	300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HATCH-1&2	GEORGIA POWER COMPANY	5746	1001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOGTLE-1&2	GEORGIA POWER COMPANY	1072	863	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIVER BEND-1	GULF STATES UTILITIES	3172	300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CLINTON-1	ILLINOIS POWER COMPANY	3472	407	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUANE ARNOLD	IOWA ELECTRIC LIGHT AND POWER CO.	2050	377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WOLF CREEK	KANSAS GAS AND ELECTRIC COMPANY	1398	418	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHOREHAM	LONG ISLAND LIGHTING COMPANY	3176	390	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATERFORD-3	LOUISIANA POWER AND LIGHT	1088	443	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND GULF-1	MISSISSIPPI POWER AND LIGHT CO	4324	800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NINE MILE POINT-2	NIAGARA MOHAWK POWER CORPORATION	4049	737	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MILLSTONE-3	NORTHEAST UTILITIES	756	307	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUMBOLDT BAY	PACIFIC GAS AND ELECTRIC CO	406	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUSQUEHANNA-1&2	PENNSYLVANIA POWER AND LIGHT CO	5600	1039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIMERICK-2	PHILADELPHIA ELECTRIC COMPANY	2040	371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEABROOK-1	PUBLIC SERVICE CO. OF NEW HAMPSHIRE	1238	365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEABROOK-2	PUBLIC SERVICE CO. OF NEW HAMPSHIRE	1238	368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-1	PUBLIC SERVICE ELECTRIC AND GAS CO	1170	341	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-2	PUBLIC SERVICE ELECTRIC AND GAS CO.	1170	337	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUMMER	SOUTH CAROLINA ELECTRIC AND GAS CO.	683	312	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN ONOFRE-1,2,&3	SOUTHERN CALIFORNIA EDISON COMPANY	1816	472	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CURRENT AT-REACTOR CAPACITY - PROJECTED CUMULATIVE STORAGE REQUIREMENTS

REACTOR NAME	UTILITY NAME	ASSEMBLIES	MTIHM	ASSEMBLIES														METRIC TONS													
				1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
SOUTH TEXAS PROJ-1	HOUSTON LIGHTING AND POWER COMPANY	724	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH TEXAS PROJ-2	HOUSTON LIGHTING AND POWER COMPANY	724	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-1&2	TENNESSEE VALLEY AUTHORITY	6942	1263	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-3	TENNESSEE VALLEY AUTHORITY	3471	632	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATTS BAR-1&2	TENNESSEE VALLEY AUTHORITY	1312	605	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELLEFONTE-1	TENNESSEE VALLEY AUTHORITY	1038	483	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELLEFONTE-2	TENNESS. 2 VALLEY AUTHORITY	1038	483	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARTSVILLE-A1	TENNESSEE VALLEY AUTHORITY	2040	371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARTSVILLE-A2	TENNESSEE VALLEY AUTHORITY	2040	371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-1	TENNESSEE VALLEY AUTHORITY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-2	TENNESSEE VALLEY AUTHORITY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY-1	UNION ELECTRIC COMPANY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-1	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	1070	493	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-3	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	1130	461	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-2 FOR POOL	CAROLINA POWER AND LIGHT COMPANY	144	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-1 FOR POOL	CAROLINA POWER AND LIGHT COMPANY	160	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-BWR	MORRIS FUEL STORAGE FACILITY	3133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-PWR	MORRIS FUEL STORAGE FACILITY	707	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-BWR	WEST VALLEY NUCLEAR FUEL SERVICES	841	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-PWR	WEST VALLEY NUCLEAR FUEL SERVICES	399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SUBTOTALS BY REACTOR TYPE AND TOTALS

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
PWR ASSEMBLY	30	221	303	817	[illegible]	2314	3266	4419	5686	6991	8508	10301	12393	13074
PWR MT. TONS	13	90	123	283	604	883	1277	1759	2301	2859	3507	4273	5348	6302
BWR ASSEMBLY	304	773	1401	1889	2530	3533	4837	7072	8563	10539	13422	15278	17903	20774
BWR MT TONS	91	139	231	339	456	636	870	1271	1537	1876	2409	2742	3313	3739
TOTAL ASSEMBLY	334	994	1704	2706	4011	5847	8103	11491	14249	17530	21930	25579	30296	33848
TOTAL MT TONS	104	229	354	622	1059	1517	2147	3030	3838	4735	5916	7015	8661	10041

Table 3

CURRENT AT-REACTOR WITH POOL EXPANSIONS CAPACITY - PROJECTED ANNUAL STORAGE REQUIREMENTS

		EXPANDED BASIS STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
REACTOR NAME	UTILITY NAME	ASSEMBLIES	TONS	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
BRUNSWICK-2	CAROLINA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BRUNSWICK-1	CAROLINA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VERMONT YANKEE	VERMONT YANKEE NUCLEAR POWER CORP.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TURKEY POINT-3	FLORIDA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MILLSTONE-2	NORTHEAST UTILITIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PALISADES	CONSUMERS POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TURKEY POINT-4	FLORIDA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ST. LUCIE-1	FLORIDA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MILLSTONE-1	NORTHEAST UTILITIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SURRY-1&2	VIRGINIA ELECTRIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ARKANSAS NUCL ONE-1	ARKANSAS POWER AND LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TROJAN	PORTLAND GENERAL ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCONEE-3	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ROBINSON-2	CAROLINA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LA SALLE-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PRAIRIE ISLAND-1&2	NORTHERN STATES POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PEACH BOTTOM-2	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PEACH BOTTOM-3	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LA CROSSE	DAIRYLAND POWER COOPERATIVE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCONEE-1&2	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MONTICELLO	NORTHERN STATES POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GINNA	ROCHESTER GAS AND ELECTRIC CORP.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DRESDEN-3	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FITZPATRICK	POWER AUTH. OF STATE OF NY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CALVERT CLIFFS-1&2	BALTIMORE GAS AND ELECTRIC CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PILGRIM-1	BOSTON EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DRESDEN-2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INDIAN POINT-2	CONSOLIDATED EDISON CO. OF NEW YORK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OYSTER CREEK	JERSEY CENTRAL POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
COOPER	NEBRASKA PUBLIC POWER DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BROWNSFERRY-1&2	TENNESSEE VALLEY AUTHORITY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ARKANSAS NUCL ONE-2	ARKANSAS POWER AND LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BYRON-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LIMERICK-1	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INDIAN POINT-3	POWER AUTH. OF THE ST. OF NY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
COMANCHE PEAK-1&2	TEXAS UTILITIES GENERATING COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DAVIS-BESSE-1	TOLEDO EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
POINT BEACH-1&2	WISCONSIN ELECTRIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ZION-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BIG ROCK POINT	CONSUMERS POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BEAVER VALLEY-1	DUQUESNE LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
D C COOK-1&2	INDIANA & MICHIGAN ELECTRIC CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FORT CALHOUN-1	OMAHA PUBLIC POWER DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BRAIDWOOD-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAINE YANKEE	MAINE YANKEE ATOMIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
WNP-2	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FARLEY-1	ALABAMA POWER CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

CURRENT AT-REACTOR WITH POOL EXPANSIONS CAPACITY - PROJECTED ANNUAL STORAGE REQUIREMENTS

Page 1

REACTOR NAME	UTILITY NAME	EXPANDED BASIN STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
		ASSEMBLIES	TONS	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
FARLEY-2	ALABAMA POWER CO	1407	600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PALO VERDE-1	ARIZONA PUBLIC SERVICE CO	665	303	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PALO VERDE-2	ARIZONA PUBLIC SERVICE CO	665	301	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PALO VERDE-3	ARIZONA PUBLIC SERVICE CO	665	303	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARRIS -1	CAROLINA POWER AND LIGHT	1312	676	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERRY-1&2	CLEVELAND ELECTRIC ILLUMINATING COMPANY	4020	736	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DRESDEN-1	COMMONWEALTH EDISON COMPANY	720	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QUAD CITIES-1&2	COMMONWEALTH EDISON COMPANY	6000	1125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONNECTICUT YANKEE	NORTHEAST UTILITIES	672	277	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-1	CONSOLIDATED EDISON CO. OF NEW YORK	756	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIDLAND-1&2	CONSUMERS POWER COMPANY	1890	480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FERMI-2	DETROIT EDISON COMPANY	2305	420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MC GUIRE-1	DUKE POWER COMPANY	500	230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MC GUIRE-2	DUKE POWER COMPANY	500	230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-1	DUKE POWER COMPANY	1418	636	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-2	DUKE POWER COMPANY	1418	636	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEAVER VALLEY-2	DUQUESNE LIGHT COMPANY	1088	501	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRYSTAL RIVER-3	FLORIDA POWER CORPORATION	676	313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST LUCIE-2	FLORIDA POWER AND LIGHT CO.	675	276	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HATCH-1&2	GEORGIA POWER COMPANY	6026	1097	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOGTLE-1&2	GEORGIA POWER COMPANY	1072	463	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIVER BEND-1	GULF STATES UTILITIES	2672	480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CLINTON-1	ILLINOIS POWER COMPANY	2672	481	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUANE ARNOLD	IOWA ELECTRIC LIGHT AND POWER CO.	2050	377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WOLF CREEK	KANSAS GAS AND ELECTRIC COMPANY	1340	610	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHOREHAM	LONG ISLAND LIGHTING COMPANY	2176	390	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATERFORD-3	LOUISIANA POWER AND LIGHT	1090	465	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
THREE MILE ISLAND-1	GPU NUCLEAR	752	349	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND GULF-1	MISSISSIPPI POWER AND LIGHT CO	1800	323	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND GULF-2	MISSISSIPPI POWER AND LIGHT CO	4324	820	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NINE MILE POINT-1	NIAGARA MOHAWK POWER CORPORATION	1984	284	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NINE MILE POINT-2	NIAGARA MOHAWK POWER CORPORATION	4049	739	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MILLSTONE-3	NORTHEAST UTILITIES	756	349	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUMBOLDT BAY	PACIFIC GAS AND ELECTRIC CO	484	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIABLO CANYON-2	PACIFIC GAS AND ELECTRIC CO.	270	124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIABLO CANYON-1	PACIFIC GAS AND ELECTRIC CO	270	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUSQUEHANNA-1&2	PENNSYLVANIA POWER AND LIGHT CO	5000	1027	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIMERICK-1	PHILADELPHIA ELECTRIC COMPANY	2040	371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEABROOK-1	PUBLIC SERVICE CO OF NEW HAMPSHIRE	1236	543	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEABROOK-2	PUBLIC SERVICE CO OF NEW HAMPSHIRE	1236	543	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-1	PUBLIC SERVICE ELECTRIC AND GAS CO	1170	501	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-2	PUBLIC SERVICE ELECTRIC AND GAS CO	1170	537	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOPE CREEK-1	PUBLIC SERVICE ELECTRIC AND GAS CO.	1070	195	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RANCHO SECO-1	SACRAMENTO MUNICIPAL UTILITY DISTRICT	919	440	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUMMER	SOUTH CAROLINA ELECTRIC AND GAS CO	600	318	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN ONOFRE-1,2,&3	SOUTHERN CALIFORNIA EDISON COMPANY	1046	672	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH TEXAS PROJ-1	HOUSTON LIGHTING AND POWER COMPANY	780	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

12 OCT-83

CURRENT AT-REACTOR WITH POOL EXPANSIONS CAPACITY - PROJECTED ANNUAL STORAGE REQUIREMENTS

REACTOR NAME	UTILITY NAME	EXPANDED BASIN STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
		ASSEMBLIES	TONS	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
SOUTH TEXAS PROJ-2	HOUSTON LIGHTING AND POWER COMPANY	724	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-1&2	TENNESSEE VALLEY AUTHORITY	6902	1263	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-3	TENNESSEE VALLEY AUTHORITY	3471	632	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATTS BAR-1&2	TENNESSEE VALLEY AUTHORITY	1312	605	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELLEFONTE-1	TENNESSEE VALLEY AUTHORITY	1058	482	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELLEFONTE-2	TENNESSEE VALLEY AUTHORITY	1058	482	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARTSVILLE-A1	TENNESSEE VALLEY AUTHORITY	2040	371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARTSVILLE-A2	TENNESSEE VALLEY AUTHORITY	2040	371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-1	TENNESSEE VALLEY AUTHORITY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-2	TENNESSEE VALLEY AUTHORITY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY-1	UNION ELECTRIC COMPANY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH ANNA-1&2	VIRGINIA ELECTRIC POWER COMPANY	966	444	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-1	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	1070	493	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-2	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	1120	461	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KEWAUNEE	WISCONSIN PUBLIC SERVICE CORPORATION	630	252	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YANKEE	YANKEE ATOMIC ELECTRIC COMPANY	391	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-2 PWR POOL	CAROLINA POWER AND LIGHT COMPANY	144	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-1 PWR POOL	CAROLINA POWER AND LIGHT COMPANY	160	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-BWR	MORRIS FUEL STORAGE FACILITY	3133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-PWR	MORRIS FUEL STORAGE FACILITY	707	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-BWR	WEST VALLEY NUCLEAR FUEL SERVICES	881	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-PWR	WEST VALLEY NUCLEAR FUEL SERVICES	399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SUBTOTALS BY REACTOR TYPE AND TOTALS

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
PWR ASSEMBLY	0	0	37	98	317	389	465	378	607	600	760	1008	1059	1669
PWR MT TONS	0	0	23	41	137	170	197	248	277	253	324	427	619	719
BWR ASSEMBLY	339	83	0	49	0	172	203	1062	582	1403	1874	1960	2035	2078
BWR MT TONS	43	15	0	9	0	30	37	191	97	267	341	244	366	379
TOTAL ASSEMBLY	339	83	37	147	317	561	668	1440	1189	2003	2634	2968	3094	3747
TOTAL MT TONS	43	15	23	50	137	200	234	439	374	520	665	671	985	1098

Table 4

CURRENT AT-REACTOR WITH POOL EXPANSION CAPACITY - PROJECTED CUMULATIVE STORAGE REQUIREMENTS

Page 1

REACTOR NAME	UTILITY NAME	EXPANDED BASIS STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
		ASSEMBLIES	YEAR	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
BRUNSWICK-2	CAROLINA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BRUNSWICK-1	CAROLINA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VERMONT YANKEE	VERMONT YANKEE NUCLEAR POWER CORP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TURKEY POINT-3	FLORIDA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MILLSTONE-2	NORTHEAST UTILITIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PALISADES	CONSUMERS POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TURKEY POINT-4	FLORIDA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ST LUCIE-1	FLORIDA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MILLSTONE-1	NORTHEAST UTILITIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SURRY-1&2	VIRGINIA ELECTRIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ARKANSAS NUCL ONE-2	ARKANSAS POWER AND LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TROJAN	PORTLAND GENERAL ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCONEE-3	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ROBINSON-2	CAROLINA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LA SALLE-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PRAIRIE ISLAND-1&2	NORTHERN STATES POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PEACH BOTTOM-2	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PEACH BOTTOM-3	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LA CROSSE	DAIRYLAND POWER COOPERATIVE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCONEE-1&2	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MONTICELLO	NORTHERN STATES POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GINNA	ROCHESTER GAS AND ELECTRIC CORP.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DRESDEN-3	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FITZPATRICK	POWER AUTH OF STATE OF NY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CALVERT CLIFFS-1&2	BALTIMORE GAS AND ELECTRIC CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PILGRIM-1	BOSTON EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DRESDEN-2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INDIAN POINT-2	CONSOLIDATED EDISON CO OF NEW YORK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OYSTER CREEK	JERSEY CENTRAL POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
COOPER	NEBRASKA PUBLIC POWER DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEQUOYAH-1&2	TENNESSEE VALLEY AUTHORITY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ARKANSAS NUCL ONE-1	ARKANSAS POWER AND LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BYRON-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LIMERICK-1	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INDIAN POINT-3	POWER AUTH. OF THE ST OF NY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
COMANCHE PEAK-1&2	TEXAS UTILITIES GENERATING COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DAVIS-BESSE-1	TOLEDO EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
POINT BEACH-1&2	WISCONSIN ELECTRIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ZION-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BIG ROCK POINT	CONSUMERS POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BEAVER VALLEY-1	DUQUESNE LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
D C COOK-1&2	INDIANA & MICHIGAN ELECTRIC CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FORT CALHOUN-1	OMAHA PUBLIC POWER DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BRAIDWOOD-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAINE YANKEE	MAINE YANKEE ATOMIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
WNP-2	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FARLEY-1	ALABAMA POWER CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

CURRENT BY-REACTOR WITH POOL EXPANSIONS CAPACITY - PROJECTED CUMULATIVE STORAGE REQUIREMENTS

REACTOR NAME	UTILITY NAME	EXPANDED BASIS STORAGE CAPACITY ASSEMBLIES	TONS	ASSEMBLIES 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	METRIC TONS 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
FARLEY-2	ALABAMA POWER CO	1407	604	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PALO VERDE-1	ARIZONA PUBLIC SERVICE CO	663	283	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PALO VERDE-2	ARIZONA PUBLIC SERVICE CO	663	283	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PALO VERDE-3	ARIZONA PUBLIC SERVICE CO	663	283	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARRIS -1	CAROLINA POWER AND LIGHT	1313	696	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERRY-1&2	CLEVELAND ELECTRIC ILLUMINATING COMPANY	4020	736	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DRESDEN-1	COMMONWEALTH EDISON COMPANY	780	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QUAD CITIES-1&2	COMMONWEALTH EDISON COMPANY	6984	1283	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONNECTICUT YANKEE	NORTHEAST UTILITIES	673	277	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-1	CONSOLIDATED EDISON CO. OF NEW YORK	734	143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIDLAND-1&2	CONSUMERS POWER COMPANY	1910	480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FERMI-2	DETROIT EDISON COMPANY	2305	418	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MC GUIRE-1	DUKE POWER COMPANY	500	230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MC GUIRE-2	DUKE POWER COMPANY	500	230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-1	DUKE POWER COMPANY	1418	634	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-2	DUKE POWER COMPANY	1418	634	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEAVER VALLEY-2	DUQUESNE LIGHT COMPANY	1088	502	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRYSTAL RIVER-3	FLORIDA POWER CORPORATION	676	313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST. LUCIE-2	FLORIDA POWER AND LIGHT CO.	673	234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HATCH-1&2	GEORGIA POWER COMPANY	6836	1099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOGTLE-1&2	GEORGIA POWER COMPANY	1073	863	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIVER BEND-1	GULF STATES UTILITIES	2170	390	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CLINTON-1	ILLINOIS POWER COMPANY	2673	489	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUANE ARNOLD	IOWA ELECTRIC LIGHT AND POWER CO.	2050	377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WOLF CREEK	KANSAS GAS AND ELECTRIC COMPANY	1340	618	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHOREHAM	LONG ISLAND LIGHTING COMPANY	2176	398	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATERFORD-3	LOUISIANA POWER AND LIGHT	1088	463	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
THREE MILE ISLAND-1	GPU NUCLEAR	752	349	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND GULF-1	MISSISSIPPI POWER AND LIGHT CO	1990	363	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND GULF-2	MISSISSIPPI POWER AND LIGHT CO	4314	830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NINE MILE POINT-1	NIAGARA MOHAWK POWER CORPORATION	1506	284	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NINE MILE POINT-2	NIAGARA MOHAWK POWER CORPORATION	4049	727	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MILLSTONE-3	NORTHEAST UTILITIES	756	349	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUMBOLDT BAY	PACIFIC GAS AND ELECTRIC CO.	466	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIABLO CANYON-1	PACIFIC GAS AND ELECTRIC CO	270	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIABLO CANYON-2	PACIFIC GAS AND ELECTRIC CO.	270	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUSQUEHANNA-1&2	PENNSYLVANIA POWER AND LIGHT CO.	5660	1039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIMERICK-2	PHILADELPHIA ELECTRIC COMPANY	3000	371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEABROOK-1	PUBLIC SERVICE CO. OF NEW HAMPSHIRE	1230	563	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEABROOK-2	PUBLIC SERVICE CO. OF NEW HAMPSHIRE	1230	562	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-1	PUBLIC SERVICE ELECTRIC AND GAS CO	1170	544	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-2	PUBLIC SERVICE ELECTRIC AND GAS CO	1170	537	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOPE CREEK-1	PUBLIC SERVICE ELECTRIC AND GAS CO.	1090	195	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RANCHO SECO-1	SACRAMENTO MUNICIPAL UTILITY DISTRICT	377	169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUMMER	SOUTH CAROLINA ELECTRIC AND GAS CO	682	313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN ONOFRE-1,2,&3	SOUTHERN CALIFORNIA EDISON COMPANY	1016	473	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH TEXAS PROJ-1	HOUSTON LIGHTING AND POWER COMPANY	720	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[illegible]

CURRENT AT-REACTOR WITH POOL EXPANSIONS CAPACITY - PROJECTED CUMULATIVE STORAGE REQUIREMENTS

		EXPANDED BASIN STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
REACTOR NAME	UTILITY NAME	ASSEMBLIES	TONS	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
SOUTH TEXAS PROJ-1	HOUSTON LIGHTING AND POWER COMPANY	724	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-1&2	TENNESSEE VALLEY AUTHORITY	4942	1363	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-3	TENNESSEE VALLEY AUTHORITY	3471	632	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATTS BAR-1&2	TENNESSEE VALLEY AUTHORITY	1211	605	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELLEFONTE-1	TENNESSEE VALLEY AUTHORITY	1058	482	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELLEFONTE-2	TENNESSEE VALLEY AUTHORITY	1058	482	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARTSVILLE-A1	TENNESSEE VALLEY AUTHORITY	2048	371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARTSVILLE-A2	TENNESSEE VALLEY AUTHORITY	2040	371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-1	TENNESSEE VALLEY AUTHORITY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-2	TENNESSEE VALLEY AUTHORITY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY-1	UNION ELECTRIC COMPANY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH ANNA-1&2	VIRGINIA ELECTRIC POWER COMPANY	966	446	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-1	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	1070	492	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-2	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	1130	461	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KEWAUNEE	WISCONSIN PUBLIC SERVICE CORPORATION	630	233	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YANKEE	YANKEE ATOMIC ELECTRIC COMPANY	391	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-2 PWR POOL	CAROLINA POWER AND LIGHT COMPANY	144	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-1 PWR POOL	CAROLINA POWER AND LIGHT COMPANY	160	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-BWR	MORRIS FUEL STORAGE FACILITY	3133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-PWR	MORRIS FUEL STORAGE FACILITY	707	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-BWR	WEST VALLEY NUCLEAR FUEL SERVICES	841	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-PWR	WEST VALLEY NUCLEAR FUEL SERVICES	399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SUBTOTALS BY REACTOR TYPE AND TOTALS

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
PWR ASSEMBLY	0	0	37	155	472	661	1326	1904	3331	5151	5911	4913	6373	8041
PWR MT. TONS	0	0	23	65	202	372	566	816	1093	1326	1669	2096	2713	3425
BWR ASSEMBLY	339	422	422	471	471	643	846	1908	2650	2933	3827	7265	9300	11018
BWR MT. TONS	63	78	78	87	87	117	156	345	443	710	1051	1316	1682	2061
TOTAL ASSEMBLY	339	422	459	626	943	1304	2172	3812	5981	8084	9738	12178	15673	19059
TOTAL MT TONS	63	78	101	152	289	489	722	1161	1536	2036	2721	3412	4396	5486

Table 5

MAXIMUM AT-REACTOR CAPACITY - PROJECTED ANNUAL STORAGE REQUIREMENTS

REACTOR NAME	UTILITY NAME	MAXIMUM BASIS STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
		ASSEMBLIES	[illegible]	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MILLSTONE-3	NORTHEAST UTILITIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PALISADES	CONSUMERS POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TURKEY POINT-4	FLORIDA POWER AND LIGHT CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ST LUCIE-1	FLORIDA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MILLSTONE-2	NORTHEAST UTILITIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SURRY-1&2	VIRGINIA ELECTRIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TURKEY POINT-3	FLORIDA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCONEE-3	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ROBINSON-2	CAROLINA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BRUNSWICK-2	CAROLINA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LA SALLE-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PRAIRIE ISLAND-1&2	NORTHERN STATES POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PEACH BOTTOM-2	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PEACH BOTTOM-3	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BRUNSWICK-1	CAROLINA POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LA CROSSE	DAIRYLAND POWER COOPERATIVE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCONEE-1&2	DUKE POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MONTICELLO	NORTHERN STATES POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GINNA	ROCHESTER GAS AND ELECTRIC CORP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FITZPATRICK	POWER AUTH. OF STATE OF NY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CALVERT CLIFFS-1&2	BALTIMORE GAS AND ELECTRIC CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PILGRIM-1	BOSTON EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INDIAN POINT-2	CONSOLIDATED EDISON CO. OF NEW YORK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OYSTER CREEK	JERSEY CENTRAL POWER AND LIGHT CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
COOPER	NEBRASKA PUBLIC POWER DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEQUOYAH-1&2	TENNESSEE VALLEY AUTHORITY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ARKANSAS NUCL ONE-1	ARKANSAS POWER AND LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INDIAN POINT-3	POWER AUTH. OF THE ST. OF NY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DAVIS-BESSE-1	TOLEDO EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
POINT BEACH-1&2	WISCONSIN ELECTRIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BEAVER VALLEY-1	DUQUESNE LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FORT CALHOUN-1	OMAHA PUBLIC POWER DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
D C COOK-1&2	INDIANA & MICHIGAN ELECTRIC CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAINE YANKEE	MAINE YANKEE ATOMIC POWER COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VERMONT YANKEE	VERMONT YANKEE NUCLEAR POWER CORP.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
WNP-2	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FARLEY-1	ALABAMA POWER CO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FARLEY-2	ALABAMA POWER CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PALO VERDE-1	ARIZONA PUBLIC SERVICE CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PALO VERDE-2	ARIZONA PUBLIC SERVICE CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PALO VERDE-3	ARIZONA PUBLIC SERVICE CO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ARKANSAS NUCL ONE-2	ARKANSAS POWER AND LIGHT COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
HARRIS -1	CAROLINA POWER AND LIGHT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PERRY-1&2	CLEVELAND ELECTRIC ILLUMINATING COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DRESDEN-1	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DRESDEN-2	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DRESDEN-3	COMMONWEALTH EDISON COMPANY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

MAXIMUM AT-REACTOR CAPACITY - PROJECTED ANNUAL STORAGE REQUIREMENTS

REACTOR NAME	UTILITY NAME	MAXIMUM RATED STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
		ASSEMBLIES	MTU	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
QUAD CITIES-1&2	COMMONWEALTH EDISON COMPANY	[illegible]	1340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONNECTICUT YANKEE	NORTHEAST UTILITIES	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-1	CONSOLIDATED EDISON CO. OF NEW YORK	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIG ROCK POINT	CONSUMERS POWER COMPANY	345	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIDLAND-1&2	CONSUMERS POWER COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FERMI-2	DETROIT EDISON COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MC GUIRE-1	DUKE POWER COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MC GUIRE-2	DUKE POWER COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-1	DUKE POWER COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-2	DUKE POWER COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEAVER VALLEY-2	DUQUESNE LIGHT COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRYSTAL RIVER-3	FLORIDA POWER CORPORATION	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST. LUCIE-2	FLORIDA POWER AND LIGHT CO.	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HATCH-1&2	GEORGIA POWER COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOGTLE-1&2	GEORGIA POWER COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIVER BEND-1	GULF STATES UTILITIES	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CLINTON-1	ILLINOIS POWER COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUANE ARNOLD	IOWA ELECTRIC LIGHT AND POWER CO	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WOLF CREEK	KANSAS GAS AND ELECTRIC COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHOREHAM	LONG ISLAND LIGHTING COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATERFORD-3	LOUISIANA POWER AND LIGHT	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
THREE MILE ISLAND-2	GPU NUCLEAR	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND GULF-1	MISSISSIPPI POWER AND LIGHT CO	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND GULF-2	MISSISSIPPI POWER AND LIGHT CO	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NINE MILE POINT-1	NIAGARA MOHAWK POWER CORPORATION	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NINE MILE POINT-2	NIAGARA MOHAWK POWER CORPORATION	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MILLSTONE-3	NORTHEAST UTILITIES	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUMBOLDT BAY	PACIFIC GAS AND ELECTRIC CO.	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIABLO CANYON-1	PACIFIC GAS AND ELECTRIC CO.	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIABLO CANYON-2	PACIFIC GAS AND ELECTRIC CO	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUSQUEHANNA-1&2	PENNSYLVANIA POWER AND LIGHT CO.	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIMERICK-1	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIMERICK-2	PHILADELPHIA ELECTRIC COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TROJAN	PORTLAND GENERAL ELECTRIC COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEABROOK-1	PUBLIC SERVICE CO. OF NEW HAMPSHIRE	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEABROOK-2	PUBLIC SERVICE CO. OF NEW HAMPSHIRE	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-1	PUBLIC SERVICE ELECTRIC AND GAS CO.	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-2	PUBLIC SERVICE ELECTRIC AND GAS CO.	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOPE CREEK-1	PUBLIC SERVICE ELECTRIC AND GAS CO.	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RANCHO SECO-1	SACRAMENTO MUNICIPAL UTILITY DISTRICT	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUMMER	SOUTH CAROLINA ELECTRIC AND GAS CO	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN ONOFRE-1,2,3	SOUTHERN CALIFORNIA EDISON COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH TEXAS PROJ-1	HOUSTON LIGHTING AND POWER COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH TEXAS PROJ-2	HOUSTON LIGHTING AND POWER COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-1&2	TENNESSEE VALLEY AUTHORITY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-3	TENNESSEE VALLEY AUTHORITY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATTS BAR-1&2	TENNESSEE VALLEY AUTHORITY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELLEFONTE-1	TENNESSEE VALLEY AUTHORITY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELLEFONTE-2	TENNESSEE VALLEY AUTHORITY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	TENNESSEE VALLEY AUTHORITY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MAXIMUM AT-REACTOR CAPACITY - PROJECTED ANNUAL STORAGE REQUIREMENTS

REACTOR NAME	UTILITY NAME	MAXIMUM BASIN STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
		ASSEMBLIES	MTIHM	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
HARTSVILLE-A2	TENNESSEE VALLEY AUTHORITY	3062	331	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-1	TENNESSEE VALLEY AUTHORITY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-2	TENNESSEE VALLEY AUTHORITY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COMANCHE PEAK-1&2	TEXAS UTILITIES GENERATING COMPANY	2720	1250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY-1	UNION ELECTRIC COMPANY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH ANNA-1&2	VIRGINIA ELECTRIC POWER COMPANY	1737	799	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-1	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	1070	492	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-3	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	1130	461	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KEWAUNEE	WISCONSIN PUBLIC SERVICE CORPORATION	990	396	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YANKEE	YANKEE ATOMIC ELECTRIC COMPANY	721	166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-2 PWR POOL	CAROLINA POWER AND LIGHT COMPANY	144	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-1 PWR POOL	CAROLINA POWER AND LIGHT COMPANY	160	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-BWR	MORRIS FUEL STORAGE FACILITY	3133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-PWR	MORRIS FUEL STORAGE FACILITY	707	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-BWR	WEST VALLEY NUCLEAR FUEL SERVICES	841	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-PWR	WEST VALLEY NUCLEAR FUEL SERVICES	399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SUBTOTALS BY REACTOR TYPE AND TOTALS

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
PWR ASSEMBLY	0	0	30	76	279	295	423	403	553	558	644	842	1140	1372
PWR MT. TONS	0	0	30	31	120	128	177	204	236	233	281	359	492	585
BWR ASSEMBLY	0	0	0	49	0	172	262	1101	592	1304	1723	884	1769	1665
BWR MT TONS	0	0	0	9	0	30	48	199	107	232	310	160	318	301
TOTAL ASSEMBLY	0	0	30	125	279	467	685	1504	1145	1862	2367	1726	2909	3037
TOTAL MT. TONS	0	0	30	40	120	158	225	403	343	465	591	519	810	886

Table 6

MAXIMUM AT-REACTOR CAPACITY - PROJECTED CUMULATIVE STORAGE REQUIREMENTS

Page 1

REACTOR NAME	UTILITY NAME	MAXIMUM BASIN STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
		ASSEMBLIES	MTIHM	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MILLSTONE-2	NORTHEAST UTILITIES	667	271	0	0	30	109	170	170	242	314	379	379	444	509	575	575	0	0	10	44	72	72	100	127	153	153	180	206	233	233
PALISADES	CONSUMERS POWER COMPANY	798	310	0	0	0	3	60	60	120	179	179	239	299	299	360	423	0	0	0	1	23	23	47	69	69	93	116	116	140	164
TURKEY POINT-4	FLORIDA POWER AND LIGHT CO	436	191	0	0	0	4	61	61	116	173	173	230	266	266	303	403	0	0	0	1	28	28	53	79	79	103	121	121	137	185
ST. LUCIE-1	FLORIDA POWER AND LIGHT CO	700	298	0	0	0	3	3	73	145	145	218	289	289	342	433	435	0	0	0	1	1	27	53	53	80	105	105	130	130	139
MILLSTONE-1	NORTHEAST UTILITIES	2184	387	0	0	0	69	69	229	291	394	394	570	745	745	925	925	0	0	0	9	9	39	39	70	70	101	131	131	163	163
SURRY-1&2	VIRGINIA ELECTRIC POWER COMPANY	1044	473	0	0	0	4	37	130	[illegible]	289	376	458	584	610	670	735	0	0	0	3	24	61	100	133	181	209	230	260	301	330
TURKEY POINT-3	FLORIDA POWER AND LIGHT CO	436	191	0	0	0	0	96	[illegible]	[illegible]	131	200	200	256	307	307	364	0	0	0	0	21	44	44	69	91	91	116	141	141	167
OCONEE-3	DUKE POWER COMPANY	825	383	0	0	0	0	0	53	103	113	170	170	224	275	275	337	0	0	0	0	0	25	38	52	80	80	109	137	137	164
[illegible]-2	CAROLINA POWER AND LIGHT CO.	560	224	0	0	0	0	0	0	1	55	100	146	146	172	229	286	0	0	0	0	0	0	6	24	43	43	63	83	101	133
[illegible]-1	CAROLINA POWER AND LIGHT CO	1039	244	0	0	0	0	0	0	91	91	225	273	373	532	496	696	0	0	0	0	0	0	11	11	40	70	70	97	130	138
LA SALLE-1&2	COMMONWEALTH EDISON COMPANY	3160	793	0	0	0	0	0	0	70	490	490	881	1300	1300	1603	2089	0	0	0	0	0	0	14	89	89	160	233	233	306	380
PRAIRIE ISLAND-1&2	NORTHERN STATES POWER COMPANY	1117	309	0	0	0	0	0	0	41	118	181	233	334	396	460	561	0	0	0	0	0	0	16	45	73	105	130	130	167	216
PEACH BOTTOM-2	PHILADELPHIA ELECTRIC COMPANY	3066	343	0	0	0	0	0	0	67	200	200	360	733	733	963	1173	0	0	0	0	0	0	13	38	38	73	134	134	175	217
PEACH BOTTOM-3	PHILADELPHIA ELECTRIC COMPANY	3066	343	0	0	0	0	0	0	70	301	301	380	729	729	938	1190	0	0	0	0	0	0	11	31	31	73	130	130	170	217
[illegible]-1	CAROLINA POWER AND LIGHT CO	1003	227	0	0	0	0	0	0	0	39	215	215	373	533	533	673	0	0	0	0	0	0	0	11	40	40	75	100	100	130
LA CROSSE	DAIRYLAND POWER COOPERATIVE	440	88	0	0	0	0	0	0	0	11	33	54	76	98	138	148	0	0	0	0	0	0	0	1	3	6	8	11	13	15
OCONEE-1&2	DUKE POWER COMPANY	1312	609	0	0	0	0	0	0	0	50	110	230	301	303	465	534	0	0	0	0	0	0	0	23	51	106	130	160	214	263
MONTICELLO	NORTHERN STATES POWER COMPANY	2237	396	0	0	0	0	0	0	0	1	73	73	184	279	378	438	0	0	0	0	0	0	0	0	14	14	33	49	64	81
GINNA	ROCHESTER GAS AND ELECTRIC CORP	395	233	0	0	0	0	0	0	0	35	50	73	100	123	131	177	0	0	0	0	0	0	0	9	18	36	35	46	58	63
FITZPATRICK	POWER AUTH. OF STATE OF NY	2240	420	0	0	0	0	0	0	0	0	160	160	304	381	381	701	0	0	0	0	0	0	0	0	34	36	63	75	75	130
CALVERT CLIFFS-1&2	BALTIMORE GAS AND ELECTRIC CO.	1830	677	0	0	0	0	0	0	0	1	0	30	100	233	310	409	0	0	0	0	0	0	0	0	3	23	78	90	136	175
PILGRIM-1	BOSTON EDISON COMPANY	2320	418	0	0	0	0	0	0	0	0	0	92	92	243	433	433	0	0	0	0	0	0	0	0	0	16	16	47	77	77
INDIAN POINT-2	CONSOLIDATED EDISON CO. OF NEW YORK	980	441	0	0	0	0	0	0	0	0	0	0	10	10	83	107	0	0	0	0	0	0	0	0	0	0	0	0	38	40
OYSTER CREEK	JERSEY CENTRAL POWER AND LIGHT CO.	2600	495	0	0	0	0	0	0	0	0	0	0	137	157	374	386	0	0	0	0	0	0	0	0	0	0	25	25	46	50
COOPER	NEBRASKA PUBLIC POWER DISTRICT	2364	433	0	0	0	0	0	0	0	0	0	0	37	139	261	363	0	0	0	0	0	0	0	0	0	0	18	19	40	61
[illegible]-1&2	TENNESSEE VALLEY AUTHORITY	1386	499	0	0	0	0	0	0	0	0	0	0	0	88	130	318	0	0	0	0	0	0	0	0	0	0	0	37	78	130
ARKANSAS NUCL ONE-1	ARKANSAS POWER AND LIGHT COMPANY	910	400	0	0	0	0	0	0	0	0	0	0	0	1	63	62	0	0	0	0	0	0	0	0	0	0	0	0	29	29
[illegible]-1&2	COMMONWEALTH EDISON COMPANY	1050	944	0	0	0	0	0	0	0	0	0	0	0	38	100	244	0	0	0	0	0	0	0	0	0	0	0	36	39	103
INDIAN POINT-3	POWER AUTH. OF THE ST. OF NY	840	383	0	0	0	0	0	0	0	0	0	0	0	36	36	103	0	0	0	0	0	0	0	0	0	0	0	16	16	40
DAVIS-BESSE-1	TOLEDO EDISON COMPANY	735	340	0	0	0	0	0	0	0	0	0	0	0	43	80	80	0	0	0	0	0	0	0	0	0	0	0	38	41	46
POINT BEACH-1&2	WISCONSIN ELECTRIC POWER COMPANY	1502	682	0	0	0	0	0	0	0	0	0	0	0	26	83	144	0	0	0	0	0	0	0	0	0	0	0	7	29	56
ZION-1&2	COMMONWEALTH EDISON COMPANY	2079	930	0	0	0	0	0	0	0	0	0	0	0	0	60	118	0	0	0	0	0	0	0	0	0	0	0	0	10	59
BEAVER VALLEY-1	DUQUESNE LIGHT COMPANY	833	380	0	0	0	0	0	0	0	0	0	0	0	0	47	47	0	0	0	0	0	0	0	0	0	0	0	0	23	33
FORT CALHOUN-1	OMAHA PUBLIC POWER DISTRICT	729	343	0	0	0	0	0	0	0	0	0	0	0	0	33	43	0	0	0	0	0	0	0	0	0	0	0	0	0	33
BRAIDWOOD-1&2	COMMONWEALTH EDISON COMPANY	1898	881	0	0	0	0	0	0	0	0	0	0	0	0	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	27
D C COOK-1&2	INDIANA & MICHIGAN ELECTRIC CO.	2370	1096	0	0	0	0	0	0	0	0	0	0	0	0	0	71	0	0	0	0	0	0	0	0	0	0	0	0	0	30
MAINE YANKEE	MAINE YANKEE ATOMIC POWER COMPANY	1476	553	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0	9
VERMONT YANKEE	VERMONT YANKEE NUCLEAR POWER CORP	2000	435	0	0	0	0	0	0	0	0	0	0	0	0	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	7
WNP-2	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	2658	486	0	0	0	0	0	0	0	0	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	8
FARLEY-1	ALABAMA POWER CO	1407	640	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FARLEY-2	ALABAMA POWER CO	1407	640	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PALO VERDE-1	ARIZONA PUBLIC SERVICE CO	1329	566	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PALO VERDE-2	ARIZONA PUBLIC SERVICE CO	1329	566	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PALO VERDE-3	ARIZONA PUBLIC SERVICE CO	1329	566	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARKANSAS NUCL ONE-2	ARKANSAS POWER AND LIGHT COMPANY	988	431	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARRIS -1	CAROLINA POWER AND LIGHT	1512	694	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERRY-1&2	CLEVELAND ELECTRIC ILLUMINATING COMPANY	4020	736	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DRESDEN-1	COMMONWEALTH EDISON COMPANY	710	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	COMMONWEALTH EDISON COMPANY	3537	637	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MAXIMUM AT-REACTOR CAPACITY - PROJECTED CUMULATIVE STORAGE REQUIREMENTS

REACTOR NAME	UTILITY NAME	MAXIMUM BASIN STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
		ASSEMBLIES	MTIHM	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
DRESDEN-3	COMMONWEALTH EDISON COMPANY	2537	437	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QUAD CITIES-1&2	COMMONWEALTH EDISON COMPANY	7534	1360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONNECTICUT YANKEE	NORTHEAST UTILITIES	1168	481	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-1	CONSOLIDATED EDISON CO. OF NEW YORK	736	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIG ROCK POINT	CONSUMERS POWER COMPANY	505	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIDLAND-1&2	CONSUMERS POWER COMPANY	1030	480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FERMI-2	DETROIT EDISON COMPANY	2305	418	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MC GUIRE-1	DUKE POWER COMPANY	1463	670	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MC GUIRE-2	DUKE POWER COMPANY	1463	670	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-1	DUKE POWER COMPANY	2170	1002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-2	DUKE POWER COMPANY	2170	1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEAVER VALLEY-2	DUQUESNE LIGHT COMPANY	1088	500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRYSTAL RIVER-3	FLORIDA POWER CORPORATION	1157	536	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST. LUCIE-2	FLORIDA POWER AND LIGHT CO.	1076	409	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HATCH-1&2	GEORGIA POWER COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOGTLE-1&2	GEORGIA POWER COMPANY	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIVER BEND-1	GULF STATES UTILITIES	2172	390	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CLINTON-1	ILLINOIS POWER COMPANY	3672	660	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUANE ARNOLD	IOWA ELECTRIC LIGHT AND POWER CO	2050	377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WOLF CREEK	KANSAS GAS AND ELECTRIC COMPANY	1340	618	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHOREHAM	LONG ISLAND LIGHTING COMPANY	[illegible]	367	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATERFORD-3	LOUISIANA POWER AND LIGHT	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
THREE MILE ISLAND-1	GPU NUCLEAR	[illegible]	1050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND GULF-1	MISSISSIPPI POWER AND LIGHT CO	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND GULF-2	MISSISSIPPI POWER AND LIGHT CO	[illegible]	907	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NINE MILE POINT-1	NIAGARA MOHAWK POWER CORPORATION	2776	499	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NINE MILE POINT-2	NIAGARA MOHAWK POWER CORPORATION	4049	737	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MILLSTONE-3	NORTHEAST UTILITIES	1836	846	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUMBOLDT BAY	PACIFIC GAS AND ELECTRIC CO.	404	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIABLO CANYON-2	PACIFIC GAS AND ELECTRIC CO.	1400	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIABLO CANYON-1	PACIFIC GAS AND ELECTRIC CO	1400	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUSQUEHANNA-1&2	PENNSYLVANIA POWER AND LIGHT CO	[illegible]	1037	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIMERICK-1	PHILADELPHIA ELECTRIC COMPANY	2062	381	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIMERICK-2	PHILADELPHIA ELECTRIC COMPANY	2062	381	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TROJAN	PORTLAND GENERAL ELECTRIC COMPANY	1408	647	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEABROOK-1	PUBLIC SERVICE CO. OF NEW HAMPSHIRE	1236	563	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEABROOK-2	PUBLIC SERVICE CO. OF NEW HAMPSHIRE	1236	562	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-1	PUBLIC SERVICE ELECTRIC AND GAS CO.	1170	540	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-2	PUBLIC SERVICE ELECTRIC AND GAS CO.	1170	537	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOPE CREEK-1	PUBLIC SERVICE ELECTRIC AND GAS CO	[illegible]	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RANCHO SECO-1	SACRAMENTO MUNICIPAL UTILITY DISTRICT	1080	501	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUMMER	SOUTH CAROLINA ELECTRIC AND GAS CO	1276	580	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN ONOFRE-1,2,&3	SOUTHERN CALIFORNIA EDISON COMPANY	1816	675	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH TEXAS PROJ-1	HOUSTON LIGHTING AND POWER COMPANY	[illegible]	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH TEXAS PROJ-2	HOUSTON LIGHTING AND POWER COMPANY	[illegible]	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-1&2	TENNESSEE VALLEY AUTHORITY	[illegible]	1263	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-3	TENNESSEE VALLEY AUTHORITY	[illegible]	631	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATTS BAR-1&2	TENNESSEE VALLEY AUTHORITY	1312	605	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BELLEFONTE-1	TENNESSEE VALLEY AUTHORITY	1058	481	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MAXIMUM AT-REACTOR CAPACITY - PROJECTED CUMULATIVE STORAGE REQUIREMENTS

REACTOR NAME	UTILITY NAME	MAXIMUM BASIN STORAGE CAPACITY		ASSEMBLIES														METRIC TONS													
		ASSEMBLIES	MTIHM	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
BELLEFONTE-2	TENNESSEE VALLEY AUTHORITY	1030	402	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARTSVILLE-A1	TENNESSEE VALLEY AUTHORITY	2042	321	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARTSVILLE-A2	TENNESSEE VALLEY AUTHORITY	2042	321	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-1	TENNESSEE VALLEY AUTHORITY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-2	TENNESSEE VALLEY AUTHORITY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COMANCHE PEAK-1&2	TEXAS UTILITIES GENERATING COMPANY	2730	1250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALLAWAY-1	UNION ELECTRIC COMPANY	1340	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH ANNA-1&2	VIRGINIA ELECTRIC POWER COMPANY	1737	799	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-1	WASHINGTON PUBLIC POWER SUPPLY SYSTEM	1070	492	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-3	WASHINGTON PUBLIC POWER_SUPPLY SYSTEM	1130	461	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KEWAUNEE	WISCONSIN PUBLIC SERVICE CORPORATION	990	396	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YANKEE	YANKEE ATOMIC ELECTRIC COMPANY	731	166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-2 PWR POOL	CAROLINA POWER AND LIGHT COMPANY	144	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-1 PWR POOL	CAROLINA POWER AND LIGHT COMPANY	160	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-BWR	MORRIS FUEL STORAGE FACILITY	3133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-PWR	MORRIS FUEL STORAGE FACILITY	707	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-BWR	WEST VALLEY NUCLEAR FUEL SERVICES	461	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-PWR	WEST VALLEY NUCLEAR FUEL SERVICES	399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SUBTOTALS BY REACTOR TYPE AND TOTALS

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
PWR ASSEMBLY	0	0	30	126	403	700	1133	1406	2139	2717	3301	4033	5303	6733
PWR MT. TONS	0	0	20	31	172	300	477	683	910	1132	1432	1791	2303	3060
BWR ASSEMBLY	0	0	0	49	49	221	483	1584	2176	3460	5105	6067	7830	9303
BWR MT. TONS	0	0	0	9	9	39	87	286	393	433	935	1094	1413	1714
TOTAL ASSEMBLY	0	0	30	175	454	921	1606	3190	4335	6177	8566	10273	13331	16230
TOTAL MT TONS	0	0	20	40	180	339	564	969	1311	1776	2368	2886	3696	4982

Attachment 2

Discussion On The Sensitivity Analysis Of The Effect Of Increased Fuel Burnups On Cumulative Spent Fuel Discharges

Discussion On The Sensitivity Analysis Of The Effect Of Increased Fuel Burnups On Cumulative Spent Fuel Discharges

To analyze the effect of increased fuel burnup on the spent fuel discharged from commercial nuclear power plants, predictions were made with respect to the rate and time of implementation by the utility industry. These predictions were taken from a current ongoing study of extended fuel burnup, Reference 1. In addition, an earlier prediction used by the Energy Information Administration (EIA) to scope the effect of increased burnup on discharge rates was included in this analysis, Reference 2. The Energy Information Adminstration used these predictions of the rate and level of fuel burnup to project reactor discharge of spent fuel through the year 2020. The sensitivity analysis compared these predictions with the EIA projection of discharge for no increased burnup. Table 2-1 provides the batch average burnups in (GWD/MTV) of discharged spent fuel for the implementation prediction provided in Reference 1. The scenarios include burnup with no further research and development on high burnup fuel and with further research and development on high burnup fuel. All scenarios were analyzed for the EIA no new plant orders case and for the EIA middle plant orders case. The results are depicted in Figures 2-1 through 2-4 for Boiling Water Reactors (BWR) and Pressurized Water Reactors (PWR).

Although there are significant differences in spent fuel discharge in the out years, 1997 and beyond, the difference in discharge for enhanced fuel burnup through 1997 does not indicate significant changes in discharge. This is primarily due to the time lag for the implementation of increased fuel burnup into the utility fuel cycle.

Reference 1. U.S. Department of Energy (DOE). November 1984. World Nuclear Fuel Cycle Requirements 1984. DOE/EIA - 0436 (84)

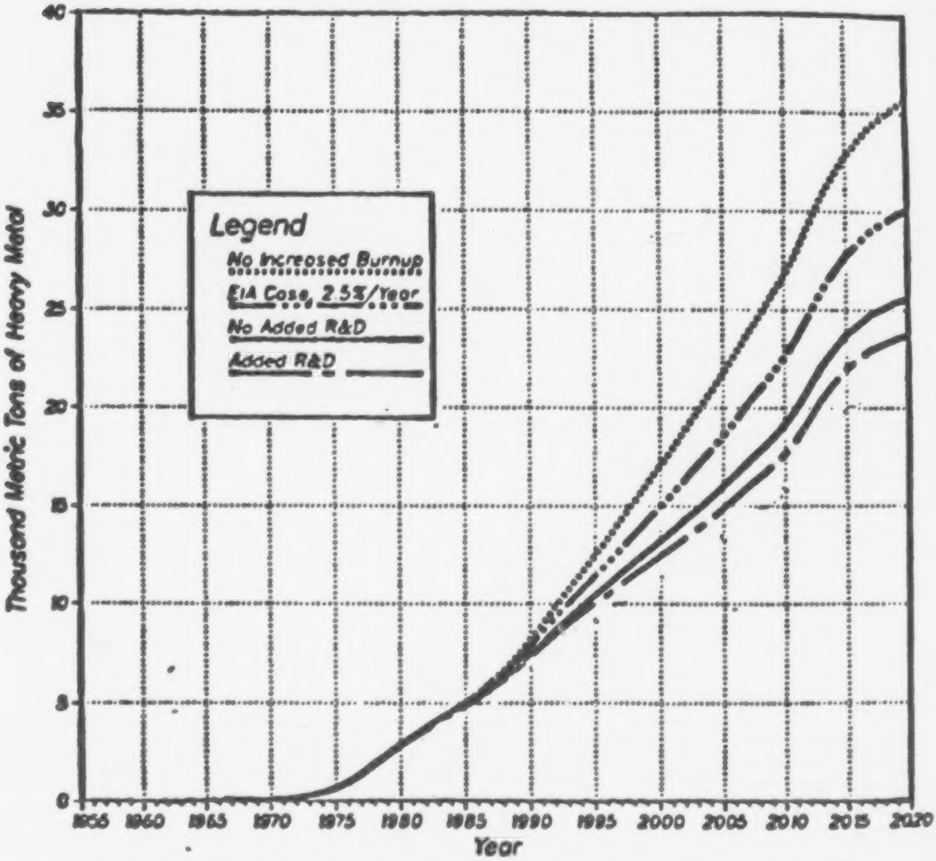
Reference 2. Franks, W.A. and Geller, L, the SM Stoller Corporation, January 1985 Draft Report On The Benefit Of Extended Burnup In Fuel Cycle Cost, 47-3528

Table 2-1

Batch Averaged Burnup (GWD/MTU) of Discharged Spent Fuel
vs.
Year of Discharge

Year	Without Further R&D	With Further R&D
	PWR Fuel	
1984	28	31
1990	35	38
1995	38	42
2000	41	46
2005 & Beyond		50
2006 & Beyond	45	
	BWR FUEL	
1984	20	27
1990	29	31
1995	32	33
2000 & Beyond	34	36
2004 & Beyond		39

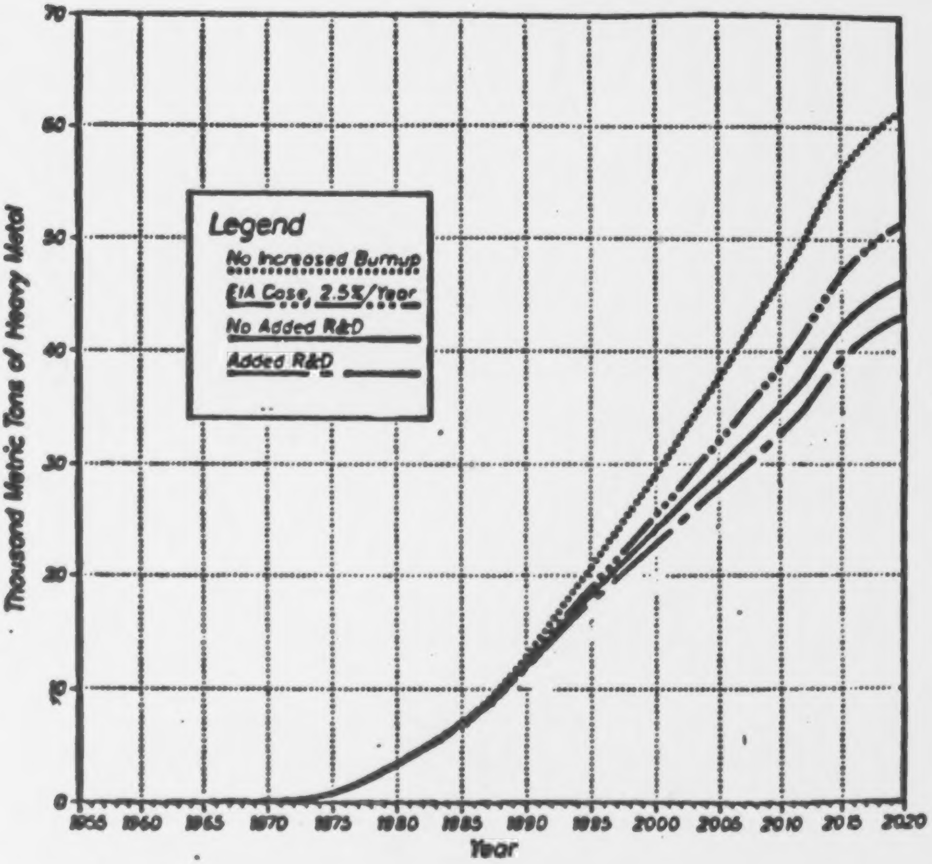
Figure 2-1
U.S. Cumulative Nuclear Spent Fuel Discharges, 1955–2020
BWR's with NO NEW ORDERS



Source: Capacity projections from Energy Information Administration, Commercial Nuclear Power 1984: Prospects for the United States and the World, DOE/EIA-0438(84) (Washington, D.C., October 1984); fuel cycle characteristics from Appendix A; nuclear spent fuel discharges calculated using the NUFUEL model, version 3 (1977).

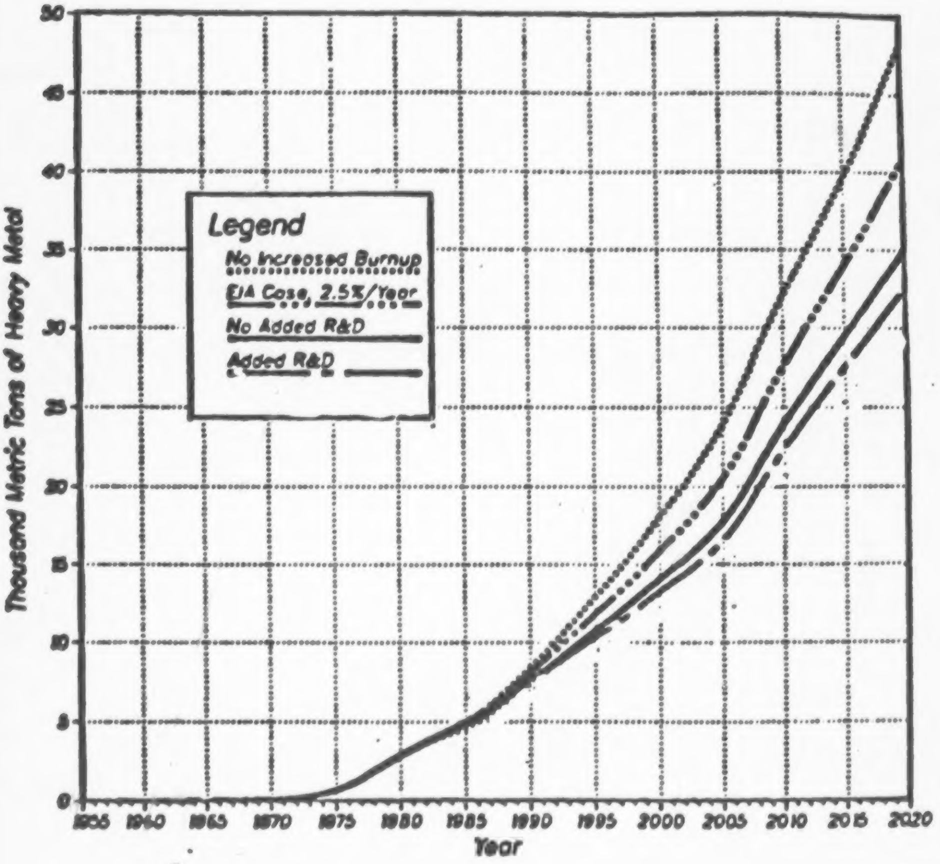
Figure 2-2

U.S. Cumulative Nuclear Spent Fuel Discharges, 1955–2020
PWR's with NO NEW ORDERS



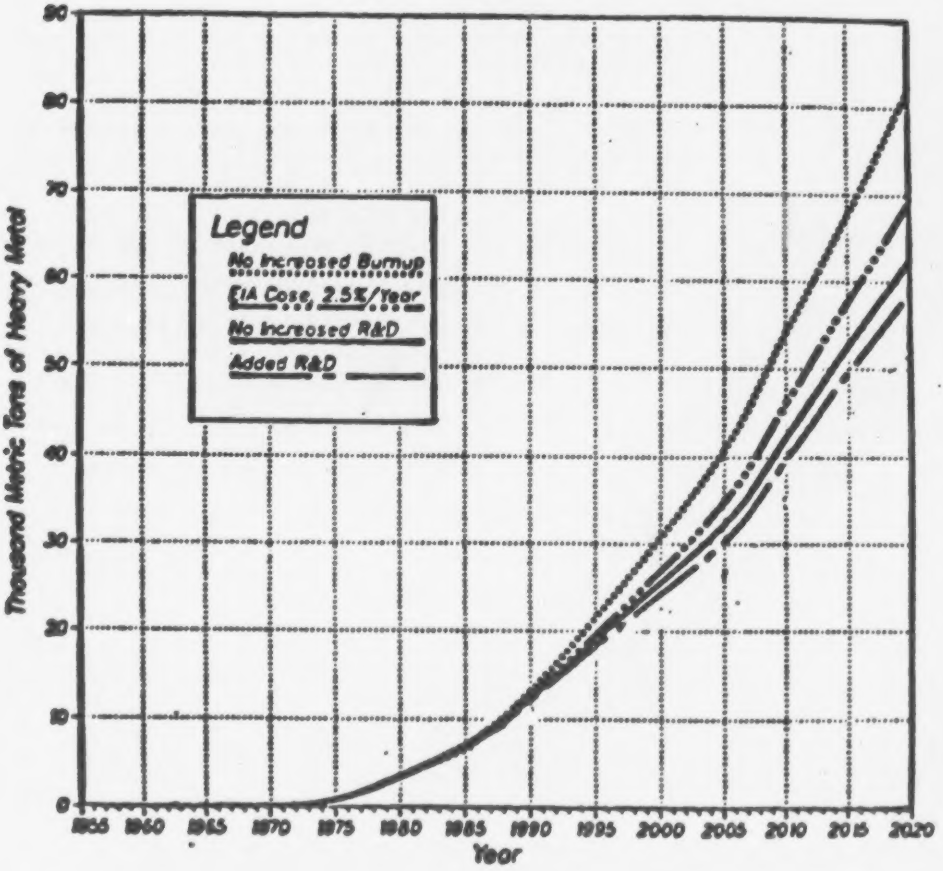
Source: Capacity projections from Energy Information Administration, *Commercial Nuclear Power 1984: Prospects for the United States and the World*, DOE/EIA-0438(84) (Washington, D.C., October 1984); fuel cycle characteristics from Appendix A; nuclear spent fuel discharges calculated using the NUFUEL model, version 3 (1977).

Figure 2-3
U.S. Cumulative Nuclear Spent Fuel Discharges, 1955–2020
BWR's, Middle Case



Source: Capacity projections from Energy Information Administration, Commercial Nuclear Power 1984: Prospects for the United States and the World, DOE/EIA-0438(84) (Washington, D.C., October 1984); fuel cycle characteristics from Appendix A; nuclear spent fuel discharges calculated using the NUFUEL model, version 3 (1977).

Figure 2-4
U.S. Cumulative Nuclear Spent Fuel Discharges, 1955–2020
PWR's, Middle Case



Source: Capacity projections from Energy Information Administration, *Commercial Nuclear Power 1984: Prospects for the United States and the World*, DOE/EIA-0438(84) (Washington, D.C., October 1984); fuel cycle characteristics from Appendix A; nuclear spent fuel discharges calculated using the NUFUEL model, version 3 (1977).

QUESTIONS FROM SENATOR JOHNSTON

Energy Taxes

Question 40A: Several Committee members discussed the effect of the Regan tax reform proposal on our domestic oil and gas industry.

Have you discussed the tax proposals with anyone in the oil and gas business and other energy and mineral industries?

Answer: I am familiar with the Treasury tax proposal and the concerns being expressed by several parts of the energy industry. An effective "outreach" effort to all energy industries to give us their views on the impacts of the Treasury proposal is necessary. I shall solicit and consider the views of the energy community on this most crucial issue.

QUESTIONS FROM SENATOR JOHNSTON

Energy Taxes

Question 40B: Please provide the Committee with copies of any analyses performed to date internally by the Energy Information Administration or elsewhere in the Department on the Treasury Department's tax simplification proposal. What data sources were used in these analyses? Was any use made of the data assembled under the Financial Reporting System?

Answer: By letter of January 2, 1985, Chairman John D. Dingell requested of Secretary Hodel, among other items, "a detailed analysis of the tax reform proposals as they relate to energy matters...." This work was specifically requested to be performed by the EIA, in the event a tax bill is submitted by the Administration. Subject to the preceding condition, EIA is preparing to perform this analysis and steps have been taken to notify Mr. Dingell's staff and the Department that this will be done. Planning for the analysis is well underway; the use of Financial Reporting System data, along with other information sources, is anticipated.

QUESTIONS FROM SENATOR JOHNSTON

Energy Taxes

Question 40C: Do you intend to do any additional analyses of the proposals' effect on the domestic oil and gas industry? On other energy and mineral industries?

Answer 40C: It is my understanding that the Department is currently conducting a detailed analysis of the effects of the Treasury tax proposal on the domestic oil, natural gas, coal, electricity, and renewables industries.

QUESTIONS FROM SENATOR JOHNSTON

Energy Taxes

Question 40D: If so, will you make those analyses available to the members of this Committee?

Answer 40D: I would be happy to give all members of the Committee a copy of the analysis of the energy effects of the Treasury tax proposal once the analysis is completed. I have been advised that the analysis will be completed in the early Spring.

QUESTIONS FROM SENATOR JOHNSTON

DOE-DOI Merger

Question 41A: In your opinion, what are the big issues in the Administration's proposed merger of DOE and DOI?

Answer: The President has requested that once confirmed, I review the question of management, efficiency and organization of DOE, and provide him with a report and options on this matter. Until I have had an opportunity to make a comprehensive assessment of this matter, I could not speculate on issues that may be identified.

QUESTIONS FROM SENATOR JOHNSTON

DOE-DOI Merger

Question 41B: Have any preliminary analyses of a proposed merger been done by either DOE or DOI staff? If so, please provide any such analyses.

Answer: To the best of my knowledge there have been no such preliminary analyses prepared.

QUESTIONS FROM SENATOR JOHNSTON

DOE-DOI Merger

Question 41C1: Under the merger, what would happen to DOE's nuclear weapons program? What would happen to the uranium enrichment program? the FERC? the nuclear waste program? the Strategic Petroleum Reserve? the program of basic research in physics and chemistry?

Answer: Please refer to the answer to question 41A.

QUESTIONS FROM SENATOR JOHNSTON

DOE-DOI Merger

Question 41C2: Where, in your opinion, would the largest saving come in this merger? What do you think the total yearly savings from the merger might be? tens of millions? hundreds of millions? billions?

Answer: Please refer to the answer to question 41A.

QUESTIONS FROM SENATOR JOHNSTON

DOE-DOI Merger

Question 41C3: Are there any functions of the Department of Energy or of the Department of the Interior that you think should be eliminated in the course of the merger? If so, what are these functions and why should they be terminated?

Answer: Please refer to the answer to question 41A.

QUESTIONS FROM SENATOR JOHNSTON

Uranium Enrichment

Question 42: One of the Federally operated businesses you are attempting to become the boss of is the uranium enrichment business. It grosses about $2 billion a year. It's also in a lot of trouble.

What do you know about the current state of the DOE's uranium enrichment program? What do you consider to be its biggest problems?

How do you intend to address these problems?

Answer: I have not yet had the opportunity to fully evaluate the enrichment program. It is my understanding, however, that the program is currently in a period of transition and is making necessary adjustments to remain competitive in the international marketplace. I have been told that the key issues are retention of its market share, ending supply and demand imbalances and development of a long-range strategy to assure that the business is competitive. I intend to see that the Department addresses these complex issues.

QUESTIONS FROM SENATOR JOHNSTON

Need for Energy Policy

Question 43:	Oil prices have been coming down and may go down further. There is a gas bubble. There has been some conservation. A lot of people are out of work, so some of the reduced consumption might not be the result of conservation. As a result, energy is not now considered to be major issue by the public. People are apathetic about energy. I think this apathy can also be seen in the Administration, particularly in the OMB where it is being seriously proposed that we stop buying oil for the Strategic Petroleum Reserve. Does this concern you? If so, what do you do about it?
Answer:	I believe that the deregulation of energy prices and the increase in energy production and conservation have done much to take energy issues off the front page of the newspapers. However, I do not believe that current conditions of plentiful supplies and stable prices should lead us to complacency or apathy. Our allies remain heavily dependent on imported oil. Continued improvements in energy efficiency will be helpful to further reduce the vulnerability of the U.S.

and its allies to potential supply disruptions, and I intend to continue emphasizing the importance of conservation as an energy resource. In addition, there are still measures to be taken to further reduce our vulnerability to supply disruptions such as natural gas decontrol and nuclear licensing reform.

QUESTIONS FROM SENATOR JOHNSTON

SPR

Question 44A: In exactly five months, authority of the Federal government to respond to an oil supply disruption or any other energy crisis will expire, including use of the Strategic Petroleum Reserve. When do you anticipate being ready to discuss with the Congress the nature of the legislation that should replace that which will expire?

Answer: I am aware that the majority of the authorities in Title I and Title II of the Energy Policy and Conservation Act (EPCA) will expire on June 30, 1985. This issue will require careful consideration by the Administration and I intend to direct my attention to it at the earliest opportunity.

QUESTIONS FROM SENATOR JOHNSTON

SPR

Question 44B: As you know, there have been proposals that the Strategic Petroleum Reserve not be filled beyond 500 million barrels, although Secretary Hodel told this Committee one year ago that he was committed to filling the SPR to 750 million barrels. Without getting into budget proposals, with what kind of analysis do you think the Congress should be presented to make the case that 500 million barrels is sufficient? Would you agree that this analysis should include estimates of how much oil the U.S. would need in various oil supply disruption scenarios and the benefits vs. the cost of filling beyond 500 million barrels?

Answer: Since the Strategic Petroleum Reserve can be characterized as insurance against the disruption of foreign oil supplies, the Administration and the Congress should consider the cost of further increases in the SPR fill, the protection we have already purchased, and the level of supplies which could be at risk in a particular period of time. I recognize that this is a complex question and one on which opinions may vary widely. I intend to give special attention to the entire issue of emergency preparedness should I be confirmed, and I recognize the important role played by the Strategic Petroleum Reserve in reducing our vulnerability to oil supply disruptions.

QUESTIONS FROM SENATOR JOHNSTON

SPR

Question 44C: The Department's management of the SPR has been severely criticized because the contractors did not have an inventory management system for tracking equipment owned by the U.S. government. Do we now have in place an inventory management system for the SPR? If we don't do you think that should be a high priority?

Answer: I have been advised by the Department that all of the Strategic Petroleum Reserve's contractors who possess U.S. government property have approved property management systems. I understand that considerable emphasis has been placed on these systems in recent years and that efforts are continuing to assure the accuracy of the inventory systems.

QUESTION FROM SENATOR JOHNSTON

RCS & CACS Letters

Question 45: On November 2, 1984, the Chairman, the Ranking Minority Member and seven other Members of the Committee wrote to the Secretary of Energy about the RCS and CACS program and the Department's plans for implementing these programs in 1985. On January 15, 1985 Senator Weicker and Senator Johnston wrote to the Under Secretary asking for an analysis of the Department's legal interpretation of its responsibilities under law with respect to the RCS program now that a certain notification requirement affecting utilities has expired. Please provide an answer to these letters.

Answer: I understand that the Department of Energy is developing a detailed response to the letters which will be provided shortly.

QUESTIONS FROM SENATOR JOHNSON

General Questions

Question 46: You say in your statement that "we seek to minimize Federal control and intervention in energy markets".

a. Is this a rule that you always follow, or are there exceptions to it? Do private market decisions automatically give us what's in the public interest? The interest of national security?

Answer: As indicated on page 2 of the Fourth National Energy Policy Plan, "The strategy to promote economic efficiency and to minimize federal intervention does not assume, however, that all forms of government activities should be eliminated." The plan goes on to mention environmental protection, enforcing health and safety standards and promoting energy security as appropriate government responsibilities.

I agree with this philosophy, and thus I agree that there are areas where Federal intervention may be appropriate.

Private market decisions do not automatically do all that is necessary for the public interest or national security.

b. For example, if the demise of the nuclear industry and the failure to develop acceptable, demonstrated technology to burn coal cleanly led to a situation in which all new industrial and utility power demand came from oil and gas, would that be a reason to do something, i.e. intervene? What do you think might be done?

Answer: I believe that the situation postulated, the demise of the nuclear industry and the failure to find acceptable ways to burn coal cleanly, is most likely to result from an excess of governmental intervention rather than an absence of it. DOE activities in both research and advocacy are directed toward preventing these evils. Nevertheless, I would say that any situation where all new energy demand were to be met by oil and gas would be an extremely distressing situation requiring serious government attention. I do not believe that is the prospect we face.

QUESTIONS FROM SENATOR JOHNSTON

General Questions

Question 47: In an interview with Inside Energy, you are quoted as saying that you "dealt with a lot of energy issues and a lot of businesses involved in the energy area with regulation and administrative action." The article says that you declined to elaborate on the kinds of cases or clients you handled. Would you tell this Committee what specific types of energy experience you bring to the position of Secretary of Energy?

Answer: In regard to the kinds of cases or clients that I represented during my private practice since 1966, I have at all times declined to discuss specifics due to the fact that it breaches a confidential relationship between attorney and client. I have stated however, that I have not represented clients significantly engaged in the energy business as defined by Public Law 95-91.

The specific types of energy issues that I addressed while I was at the Department of the Navy were as follows:

Naval Petroleum and Oil Shale Program (NPOSP). In August of 1982 the Secretary of Energy requested the Department of Defense to assist in increasing the staffing of the NPOSP with qualified military officers. The Secretary of Defense subsequently passed this issue to me with a request to coordinate with the other services to establish a program to meet DOE's needs. I reviewed the various technical skill requirements needed by officers to be assigned to duties such as the Elk Hills, California, Enhanced Oil Recovery Project; the Casper, Wyoming, Oil Shale Project; as well as key NPOSP military management positions. I developed the plan which was put into effect by DOD which has attempted to ensure the continuation of the NPOSP as an effective defense stockpile.

Nuclear Power Officer Programs. My management responsibilities for personnel acquisition and training directly involved me in the Navy's Nuclear Officer Programs. In order to operate a combat-ready fleet of nuclear powered surface ships and submarines the Navy needs approximately 4600 nuclear engineers. Assessing and retaining qualified nuclear trained personnel required special efforts to offset the stress of long hours at sea and the financial lure of civilian industry. I participated in the program development to ensure that the Navy acquired, trained, and retained adequate nuclear power personnel by expanding the NROTC nuclear studies scholarship program; increasing the exposure of Naval Academy and NROTC midshipmen to nuclear ships and submarines; proposing legislation to expand the Nuclear Officer Candidate Program as well as college scholarship programs for select nuclear enlisted personnel. In this regard, I made visits to measure the overall success of the officer acquisition process to NROTC units, the Naval Academy, the Naval Post Graduate School, nuclear submarine bases, as well as the Nuclear Propulsion Laboratory at Orlando, Florida, and the reactor at Idaho Falls, Idaho.

The Navy's Energy-related Scientific Community. I had direct supervisory responsibility for programs governing the assignment, advancement, and effective utilization of the Navy's 450+ senior executives. More than half of these executives were and are devoted to research and development programs and the management of the Navy's more than 36,000 scientists and engineers. Many of these programs (and the scientific and engineering personnel employed by them) relate directly and indirectly to the effective use of energy. For example, several programs involved engineers working in nuclear propulsion and reactor plant design while others dealt with civil and electrical engineers responsible for power generation and transmission systems. In research and development, this workforce included mechanical engineers conducting advanced applied research into steam as an energy resource and into the development and use of highly specialized petroleum distillates. In the area of energy conservation, materials engineers and physicists examined boundary layer dynamics to increase the energy efficiency of the Navy's ships and energy use enhancement.

Nuclear Weapons Programs. I participated in Department of the Navy executive discussions and briefings on nuclear weapons program development processes. These executive planning discussions on Navy nuclear forces focused on operational aspects and/or budgetary considerations, and contained a review of the human resource involvement including training, planning procedures, safety, and weapons employment.

QUESTIONS FROM SENATOR JOHNSTON

General Questions

Question 48: What do you consider to be the major issues that the Department of Energy faces in the coming year? What is your order of priorities for addressing these issues?

Answer: In the broadest terms, the major issues DOE faces this year are those of previous years: increasing America's energy security, fulfilling our national defense responsibilities through our defense programs, pushing back the frontiers of science through our research programs, and assisting Americans to obtain adequate supplies of energy at a reasonable cost.

Specific areas that I see requiring particular attention include natural gas regulations, nuclear licensing reform, tax treatment of energy industries, continuing improvement in the environmental protection and security aspects of DOE operations. I have not placed these in any particular priority order, and I am sure that I will determine that other issues need to be ranked with these.

QUESTIONS FROM SENATOR JOHNSTON

General Questions

Question 49: Given the number of politically active people engaged in the energy business in this country can you offer any explanation as to why the President selected you for this position as opposed to someone who had direct experience with energy issues?

Answer: Although I cannot speak for the President, in my opinion I have demonstrated the following qualifications for the appointment: 1) I have over the years successfully completed a number of assignments that the President has entrusted to my care; 2) I do not have any special interests or separate agendas in the energy field and can be relied on to fairly and impartially administer and advise the President; 3) I have proven to the President's satisfaction my ability to deal with plans, policies and personnel in a smooth and effective manner; and 4) the President is aware of my concern for the future of our Country and the fact that I care about what happens to my children and grandchildren.

QUESTIONS FROM SENATOR JOHNSTON

General Questions

Question 50: Given that (1) Secretary Hodel is taking to Interior with him several of the key people at the Department and (2) a number of key policy positions are vacant, upon whom will you rely for advice on policy matters until you get up to speed? Can you give us specific names of these individuals?

Answer: I will rely on the existing personnel in the Energy Department including the dedicated career service. I will also rely on substantial input from Congress, industry, consumers and other groups who deal with the Energy Department and its issues for advice and counsel as to what future we should pursue. I do not have at this time specific names of these individuals and I will not be able to provide this information until confirmed and then have an opportunity to evaluate the people upon whom I will rely. I will be pleased to provide a further answer to this question at that time.

QUESTIONS FROM SENATOR JOHNSTON

General Questions

Question 51: You have been characterized as having demonstrated great management abilities in your service in government. How do you intend to address the policy issues that confront the Department of Energy?

Answer: I intend to address the policy issues that confront the Department of Energy in a cautious and judicious manner. I consider it essential to have counsel from all parts of government and the private sector in order to make correct decisions and set plans, goals and milestones. I also consider it essential to closely counsel with relevant Senate and House committees. I do not feel effective operation of the Department can take place without close cooperation with the Congress.

QUESTIONS FROM SENATOR JOHNSTON

General Questions

Question 52: A member of the House of Representatives has requested that the Department supply a legal opinion as to whether the Secretary can abolish the position of Assistant Secretary for Conservation and Renewable Energy. It is our understanding that a legal opinion has not been submitted. Will you, if confirmed, assure the Committee that the legal opinion on this point will be supplied to this Committee?

Answer: As reflected in Secretary Hodel's January 17, 1985 letter to Chairman Dingell of the House Subcommittee on Oversight and Investigations (Committee on Energy and Commerce), it is the General Counsel's opinion that the delegation of the conservation functions to the Under Secretary is consistent with both sections 642 and 202(b) of the DOE Act. The General Counsel believes that the legislative history of the DOE Act supports the view that conservation functions may be assigned to the Under Secretary.

QUESTIONS FROM SENATOR JOHNSTON

GENERAL QUESTIONS

Question 53: Last year the Office of Science and Technology Policy began a study on national laboratories. Do you believe that we should reassess the role of our national laboratories?

Answer: The Department's laboratories are a national asset and should be managed properly. This means that they should have clear roles and missions. I understand reviews of these laboratories have been conducted by several groups over the past few years. I will become familiar with what these reviews involved. Based on this, I will then decide whether these reviews are sufficient or whether additional studies might be needed.

QUESTIONS FROM SENATOR JOHNSTON

General Questions

Question 54: Do you believe that energy security is still a major problem facing the U.S. over the rest of the century?

Answer: I believe that the Administration's market-oriented energy policy, our success in filling the Strategic Petroleum Reserve, and the Department's emergency planning efforts have significantly reduced our vulnerability to energy supply disruptions. Energy security will, of course, continue to be a major concern of national energy policy. It is my intention to continue implementing policies that enhance our energy security and reduce the Nation's vulnerability to disruption of energy supplies.

QUESTIONS FROM SENATOR JOHNSTON

General Questions

Question 55: If there were a major disruption in oil supply in the world and a doubling or tripling of oil prices, what role do you think government should play in alleviating the suffering or threats to health and welfare engendered by the disruption?

Answer: If a disruption occurred, our most effective insurance against severe economic impacts would be immediate drawdown of our Strategic Petroleum Reserve (SPR) and continued reliance on the market to determine the price and allocation of oil supplies.

It is my understanding that the Emergency Response Working Group (ERWG) is currently reviewing options to provide assistance to low-income households in a severe disruption. I expect to review their work in the near future. Until I have had that opportunity, I cannot comment on specific actions beyond drawdown of the SPR that the government might take to redistribute the adverse effects of a disruption. In general, I believe such assistance, if required, should be clearly targeted to those in significant need.

QUESTIONS FROM SENATOR FORD

DOE-DOI Merger

Question 56A: In your opinion, what are the big issues in the Administration's proposed merger of DOE and DOI?

Answer: The President has requested that once confirmed, I review the question of management, efficiency and organization of DOE, and provide him with a report and options on this matter. Until I have had an opportunity to make a comprehensive assessment of this matter, I could not speculate on issues that may be identified.

QUESTIONS FROM SENATOR FORD

DOE DOI Merger

Question 56B: Under the merger, what would happen to DOE's nuclear weapons program? What would happen to the uranium enrichment program? the FERC? the nuclear waste program? the Strategic Petroleum Reserve? the program of basic research in physics and chemistry?

Answer: Please refer to the answer to question 56A.

QUESTIONS FROM SENATOR FORD

DOE DOI Merger

Question 56C: Where, in your opinion, would the largest saving come in this merger? What do you think the total yearly savings from the merger might be? tens of millions? hundreds of millions? billions?

Answer: Please refer to the answer to question 56A.

QUESTIONS FROM SENATOR FORD

DOE DOI Merger

Question 56D:	Are there any functions of the Department of Energy or of the Department of Interior that you think should be eliminated in the course of the merger? If so, what are these functions and why should they be terminated?
Answer:	Please refer to the answer to question 56A.

QUESTIONS FROM SENATOR FORD

Uranium Enrichment

Question 57A:	One of the Federally operated businesses you are attempting to become the boss of is the uranium enrichment business. It grosses about $2 billion a year. It's also in a lot of trouble. What do you know about the current state of the DOE's uranium enrichment program? What do you consider to be its biggest problems?
Answer 57A:	I have not yet had the opportunity to fully evaluate the enrichment program. It is my understanding, however, that the program is currently in a period of transition and is making necessary adjustments to remain competitive in the international marketplace. I have been told that the key issues are retention of its market share, ending supply and demand imbalances and development of a long-range strategy to assure that the business is competitive. I intend to see that the Department addresses these complex issues.

QUESTIONS FROM SENATOR FORD

Uranium Enrichment

Question 57B: How do you intend to address these problems?

Answer 57B: I have not yet had the opportunity to fully evaluate the enrichment program. I am therefore unable at this time to specify the action that the Department will take to address these issues.

QUESTIONS FROM SENATOR METZENBAUM

Question 58: Recently, the position of Assistant Secretary for Conservation and Renewables was abolished. This violates the mandate of the DOE Organization Act that the Conservation function be carried out by an Assistant Secretary.

Do you plan to rectify this situation and assign the conservation function to an Assistant Secretary?

If so, when will this occur?

If not, please explain why you believe your decision is legally justified.

Answer: As reflected in Secretary Hodel's January 17, 1985 letter to Chairman John D. Dingell of the House Subcommittee on Oversight and Investigations (Committee on Energy and Commerce), it is the General Counsel's opinion that the delegation of the conservation functions to the Under Secretary is consistent with both sections 642 and 202(b) of the DOE Act. The General Counsel believes that the legislative history of the DOE Act supports the view that conservation functions may be assigned to the Under Secretary.

QUESTIONS FROM SENATOR METZENBAUM

Question 59: In FY 1983, Congress established minimum staffing levels for the Conservation section. DOE still hasn't met those levels. Will you make it a priority to meet the staffing levels set by Congress? How soon do you think you will be able to meet those levels?

Answer: I will certainly make it a priority to carry out the mandates of Congress. I intend to focus immediately on the Department's manpower and employment situation and when I have done so I will be in a better position to respond to your questions on timing.

QUESTIONS FROM SENATOR METZENBAUM

Question 60: Please explain why a DOE hiring freeze was lifted on January 24, 1985, and then reimposed the next day.

Answer: I have been advised that the lifting of the freeze was in error, and on January 25, 1985, a memorandum was issued to that effect (copy attached).

United States Government Attachment to Q.60 Department of Energy

memorandum

DATE: JAN 25 1985

REPLY TO ATTN OF: MA-211

SUBJECT: Employment Freeze

TO: Distribution List

My memo dated January 24, 1985, regarding lifting of the employment freeze was issued in error. The employment freeze remains in effect as described in my June 6, 1984, memo until further notice.

William S. Heffelfinger

William S. Heffelfinger
Director of Administration

QUESTIONS FROM SENATOR METZENBAUM

Question 61:	Do you think that the Strategic Petroleum Reserve (SPR) should be used to alleviate shortages and control price rises in the event of a supply disruption?
Answer:	It is my belief that the Strategic Petroleum Reserve (SPR) should be used to replace unavailable oil during a major supply disruption. Any petroleum supplies added to the market, including SPR oil, will put downward pressure on prices while worldwide supply and demand reach equilibrium.

QUESTIONS FROM SENATOR METZENBAUM

Question 62:	Secretary Hodel had committed the Administration to a policy of early use of SPR in large volumes. Do you intend to continue that policy position?
Answer:	It is my belief that, in general, the early sale of SPR oil in amounts sufficient to help mitigate the impact of a major supply disruption is the best policy for SPR use.

QUESTIONS FROM SENATOR METZENBAUM

Question 63: At what point should the U.S. begin to distribute oil from SPR?

Answer: While the general policy for early use of the SPR is clear, I am aware that the exact timing for SPR drawdown is contingent upon many factors that may only be known or determined at the time of the disruption, such as the nature of the disruption, amount of excess production capability, and private and/or foreign stock policies. Therefore, I believe the exact point at which SPR oil should be released cannot be specified mechanically, and must be decided by the President based on the situation at the time of the shortfall, and the nature of the shortfall itself.

QUESTIONS FROM SENATOR METZENBAUM

QUESTION 64: Do you think that the nation should rely entirely on market forces to regulate price and supplies of petroleum in the event of a supply disruption, or should the government have some plans ready to moderate prices and ensure steady supplies to schools, hospitals, farmers and police and firemen?

ANSWER: I believe a firm commitment to the principles of the free market is the best energy supply policy for both periods of surplus as well as in supply emergencies. It is clear that past government intervention in the marketplace did not work because government lacks the flexibility to deal adequately with all the complexities of our energy supply and demand system. Government intervention creates rigidities that prevent or discourage market forces from adjusting to change and uncertainty. The marketplace can best deal with millions of individual decisions permitting prompt and efficient response to particular circumstances.

Additional authorities now exist through the Defense Production Act, SPR directed sales, and economic relief programs that could be used to address specific situations, if warranted.

QUESTIONS FROM SENATOR METZENBAUM

Question 65: Two years ago, DOE sent to Congress an amendment to the SPR drawdown plan which provided for an auction and a directed sales program. DOE has developed plans for the auction, but nothing has been done on the directed sales portion of the program.

When will a directed sales program be completed by DOE?

Answer: I have been advised that the Department has under review the many and complex issues associated with directed sales of SPR oil. After careful review, it would be my intention to inform the Congress of the direction the Department is taking with respect to this issue.

QUESTIONS FROM SENATOR METZENBAUM

Question 66: Last year, Secretary Hodel promised to Congressman Synar's Subcommittee that comprehensive energy emergency preparedness legislation, including emergency economic response proposals, would be sent to Congress early this year. Are you going to follow through on that promise? If so, when?

Answer: I am aware that the Department has efforts underway to develop emergency preparedness legislation, including economic response proposals, but I cannot comment on when legislation might be proposed until after I have had the opportunity to review the analysis and options in more detail.

QUESTIONS FROM SENATOR METZENBAUM

Question 67:	Do you think that we should have a drawdown test of SPR to make sure that it will work? Since DOE contends that the drawdown capability is 2.1 million barrels per day, shouldn't we run a drawdown test at that level to see if DOE's projections are correct?
Answer:	I can certainly appreciate the need to have a high degree of confidence in the ability of the Strategic Petroleum Reserve to perform its mission if it should ever be called upon. However, I understand there are a number of ways in which testing can be conducted, and I've been informed by the Department that successful drawdown tests have already been conducted at each of the major SPR sites. I am also aware that there are legislative questions involved as well as cost and technical questions in conducting large-scale tests of the Reserve. I would like to have an opportunity to review these questions in more detail before commenting further on the need for additional drawdown tests, but I can assure members of the Committee that I place a high priority on ensuring that the energy consuming sectors of our economy as well as the general public have confidence that the Reserve can work as intended.

QUESTIONS FROM SENATOR METZENBAUM

Question 68: Will you commit to personally meeting with representatives of low-income, consumer and environmental groups on a regular basis?

Answer: Yes.

QUESTIONS FROM SENATOR LEVIN

Question 69: In a letter to Secretary Hodel on December 18, 1984, I requested an early allocation of Weatherization funds for the State of Michigan Bureau of Community Services for February, 1985 instead of April, 1985. The reason for this request is that Michigan is spending their 1984 allocation more efficiently than in the past and weatherizing more homes at an accelerated pace due to the hard winter Michigan is experiencing. I have not yet received an answer to my request. It is my understanding that regulations do not permit this request from being implemented. To your knowledge, is an early allocation prohibited by law or regulations? When can the State of Michigan expect a decision from DOE on this request?

Answer: I am informed that a response to your request has been sent, signed by Under Secretary Pat Collins on January 25, 1985. I would expect that every effort will be made by the program officials to expeditiously review the Michigan grant application and to award FY 1985 grant funds of $12,645,209. Barring any discrepancies in the grant application, it is my understanding that the grant award will be made by March 1 with an effective date of April 1, 1985. I am further informed that this action could provide the award thirty days in advance of the 1984 award date which was March 30, 1984.

QUESTIONS FROM SENATOR LEVIN

Question 70: In the past, Congress has expressed concern that DOE was not adequately protecting its nuclear facilities. What are your views on the importance of adequate safeguards and security at these facilities?

Answer: To me, the security of our nuclear facilities and the safeguarding of nuclear materials, weapons and the related technology is of paramount importance. Safeguards and security measures should be tailored to adequately protect against the threat which is determined by the risk, vulnerabilities, and consequences related to the amount and sensitivity of the material to be protected at each site. I am aware of DOE's commitment to upgrade security significantly at its most sensitive facilities and I fully support this commitment.

QUESTIONS FROM SENATOR BYRD

Question 71a: Mr. Herrington, are you familiar with the Clean Coal Technology program which was passed by the Congress last year as part of the FY 1985 Continuing Resolution?

Answer: I am familiar with the action of the Congress in this regard. I understand that it involves both a Clean Coal Technology Reserve fund and an effort underway at the Energy Department to determine industry's interest in participating in clean coal technology demonstration projects.

QUESTIONS FROM SENATOR BYRD

Question 71b: I understand that, to date, there have been over 400 inquiries by the private sector regarding this program. Is that accurate? Would you tell the Committee your views on the Clean Coal Technology program.

Answer: My understanding is that more than 200 inquiries have actually been received by the Department, and are more expected.

I am in wholehearted agreement with the objective of increasing the use of American coal in an environmentally sound manner. I believe the government has a legitimate research role to improve coal technologies.

QUESTIONS FROM SENATOR BYRD

Question 71c: Do you anticipate a large response, moderate resonse, or a small response to the Clean Coal Program Announcement? Are you satisfied that the Department is allocating sufficient resources to handle and analyze the private sector responses to the Department's Clean Coal Technology Program Announcement? Please tell the Committee what resources have been made available and how those resources are organized.

Answer: Based upon the large number of inquiries received to date, we anticipate a large number of responses.

My understanding is that the Department's Office of Fossil Energy is approaching the task of reviewing the responses in a serious and responsible manner. Coal technology specialists from the Department's fossil energy field centers, as well as from within the Headquarters' staff, have been identified and teams have been formed to read and analyze the submissions. Approximately 50 individuals are involved in this effort, and I can give the Congress my assurances that adequate resources will continue to be provided for this activity.

QUESTIONS FROM SENATOR BYRD

Question 71d: Do you think the Clean Coal Technology program could contribute to expanding the domestic markets for coal?

Answer: Yes, any research program that brings about a more economic, cleaner technology for coal will benefit the domestic coal market, as well as the economy in general. I would like to see more U.S. coal used in place of imported energy, and I believe new technologies for coal use can move this country significantly in that direction.

QUESTIONS FROM SENATOR BYRD

Question 71e: Do you think the Clean Coal Technology program is compatible with the Administration's position on acid rain?

Answer: It would appear to me that the Clean Coal Technology program could contribute to acid rain control efforts. However, it is also my impression that the Department's ongoing fossil energy research and development program is addressing acid rain control technology in an effective and fiscally sound manner.

QUESTIONS FROM SENATOR BYRD

Question 71f: Do you think the Clean Coal Technology program is compatible or incompatible with the Administration's general emphasis on letting the private sector take the lead in technology development?

Answer: Although I am not familiar with the details of the program, I understand that it does envision significant cost sharing on the part of the private sector. In this respect, I believe it takes a step in the right direction by emphasizing cost sharing from industry. The Administration has generally not endorsed federal funding for demonstration projects, believing that new technologies offering significant market potential should be financed by the private sector and that federal funding often makes the government a competitor to private initiatives.

QUESTIONS FROM SENATOR BYRD

Question 71g: Do you support the Clean Coal program? If so, why?

Answer: I support the effort to develop new technological options for the use of coal. The government has a legitimate role in establishing the technology base for industry to use in selecting which options make the most commercial sense. I want to look very closely at the industry's commitment to these projects, at the existence of other, privately-financed efforts, and at other federal incentives that might be used in lieu of direct federal funding, before deciding on whether or not to support any particular appropriations from the Clean Coal Technology Reserve Fund. I assure you that I will look at this program with an open mind and will give it my most careful and studied consideration.

QUESTIONS FROM SENATOR DeCONCINI

Question 72:	If possible, could you explain for the record your views on a national energy policy? What role do you believe the Federal government ought to play in the development and regulation of our nation's energy resources?
Answer:	As I explained in my prepared statement, I intend to pursue the energy policies enunciated in the fourth National Energy Policy Plan (NEPP-IV) which the President submitted to the Congress in October of 1983. I agree with that document that the goal of national energy policy is to foster an adequate supply of energy at a reasonable cost. The two strategies to achieve this goal are first, to seek to minimize Federal control and intervention in energy markets, while maintaining public health, safety, and environmental quality; and second, to promote a balanced and mixed energy resource system. I consider conservation and energy efficiency improvements as one of our resources. I share with the President the view that the nation must avoid undue dependence on any single energy source. To that end the Federal government must encourage a flexible system in

which the mix of energy supplies is appropriate to support economic growth and adequate to permit producers and consumers to choose freely among a wide range of energy options.

QUESTIONS FROM SENATOR DeCONCINI

Question 73: While the present energy glut has lessened the fear of an imminent energy crisis, do you believe the United States can afford to abandon Federal assistance to promote the advancement and development of alternative energy sources such as solar power and other renewables? If no, could you explain your views as to what the Federal involvement in the advancement of solar and other renewable sources should be.

Answer: I plan to study this area very carefully, but my general observation would be that I would not be inclined to abandon Federal assistance to promote the advancement of alternative energy sources such as the solar energy technologies.

I am aware that several renewable energy technologies currently provide valuable amounts of power to the national energy supply system. These and other renewable energy options show promise for additional contributions within the highly competitive and diversified energy marketplace of the future. While the remaining scientific and technical challenges to realizing this promise are considerable, they can be met by industry and government cooperatively pursuing a vigorous but well structured research agenda over the next several years.

QUESTIONS FROM SENATOR DeCONCINI

Question 74: What are your views on the present energy tax credits? Should they be extended?

Answer: From an energy standpoint, I want to be certain that conservation and renewable energy technologies have a reasonable chance to be competitive with other energy sources, which may require extension of energy tax credits beyond December 31, 1985. However, tax and energy policy represents a complex subject area which will require additional study on my part to reach a personal conclusion as to the best method for accomplishing these objectives.

QUESTIONS FROM SENATOR DeCONCINI

Question 75: Do you believe we are successfully fulfilling our mandate to provide for permanent oil supplies in our Strategic Petroleum Reserve?

Answer: It is my belief that the Department is successfully fulfilling its mandate to create, develop, and maintain a Strategic Petroleum Reserve (SPR).

I am informed that the SPR now contains over 450 million barrels of crude oil, more than 4 times its level 4 years ago. This represents about 100 days of net petroleum imports into the United States at current import rates. The SPR could be drawn down at an initial rate of 2.3 million barrels per day. The progress in filling the SPR and improvements in world oil market conditions have reduced the vulnerability of the United States to petroleum supply disruptions.

QUESTIONS FROM SENATOR DeCONCINI

Question 76: Do you feel there is a need for any change in the present structure and Federal policies relative to the marketing of hydroelectric power? If so, please explain.

Answer: I am aware that the present structure and Federal policies relative to the marketing of hydroelectric power are the result of very complex historical, technical and political considerations. Therefore, I would want to give the most careful study and attention to this program before formulating an opinion as to what changes, if any, might be needed.

QUESTIONS FROM SENATOR DeCONCINI

Question 77: What are your thoughts on the elimination of the Department of Energy?

Answer: As I have previously stated, the President has nominated me to be a full-time Secretary of Energy and not a caretaker. I expect to apply vigorous leadership to management of the Department. However, the President has requested that once confirmed, I review the question of management, efficiency, and organization of the Department and provide him with a report and options on this matter.

QUESTIONS FROM SENATOR BUMPERS

Question 78 : Will the Department of Energy submit comprehensive Natural Gas Decontrol Legislation to the Congress?

Answer: I firmly believe in the ultimate deregulation of the production of all natural gas in the United States. I am also concerned that the natural gas transportation system be sufficiently flexible and competitive to allow the economical marketing of all gas that is economically available in the United States.

The Department of Energy will be appearing before the Federal Energy Regulatory Commission in the near future in support of these objectives. I believe that an ultimate decision on the submission of legislation should await a few months of experience in the post-decontrol environment. The obvious and continuing success of that policy should make it easier to secure Congressional support of any legislative effort.

While no final decision will be made until that time, I believe that natural gas legislation will ultimately be necessary to secure the full benefits of decontrol for America.

QUESTIONS FROM SENATOR BUMPERS

Question 79: Will you submit legislation to repeal the Fuel Use Act?

Answer: The Fuel Use Act represents a substantial interference with the ability of American consumers to make their own choices as to the best type of fuel to use for current and future applications. At the same time, many of the counterproductive effects of the Act have been removed by a repeal of the so-called "off-gas" provisions and by administrative changes in 1981. I believe the Fuel Use Act should be repealed as part of a comprehensive natural gas proposal.

APPENDIX III

Responses of the Environmental Policy Institute to an Additional Question of Senator Domenici

Follow-up Question for Mr. Robert Alvarez
Environmental Policy Institute

From Senator Pete V. Domenici
January 31, 1985

Mr. Alvarez, in your testimony today, you stated that 280 DOE nuclear facilities are "capable of inflicting over 460 million (sic) in damages from accidental or non-routine release of radioactivity." Would you please explain the rationale for that number?

ENVIRONMENTAL POLICY INSTITUTE

February 7, 1985

Official Committee File

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
FEB 11 1985
[illegible]
WASHINGTON, D.C. 20510

Honorable Pete V. Dominici
Chairman,
Committee onthe Budget
United States Senate
Washington, D.C. 20510

Dear Senator Dominici:

I am writing this to reply to a question you posed to me contained in a letter from Senator McClure regarding my January 31, 1985 statement on the nomination of Mr. John Herrington for Secretary of Energy. You asked me to explain the rationale for the figure I used on page five of my statement which refers to the potential of DOE nuclear facilities for severe radiological accidents.

After reviewing my statement, I believe that there is a typographical error which should be corrected to read, "the Department of Energy owns some 280 nuclear facilities which are capable of inflicting over $60 million /not 460 million/ in damages from accidental or non-routine releases of radioactivity." I caught this error in the version of my statement submitted two days before the hearing and corrected it in the version I presented on the 31st.

The rationale for this figure is based on two official reports. The first is a General Accounting Office report to Congress of September, 1981 1/ which found that DOE owns 280 different nuclear facilities which are covered under the Price/Anderson Act as compared to 178 NRC-licensed facilities covered. The second report was filed by the DOE to Congress in August,1983 2/ which describes the criteria for meeting the indemnification requirements of the Price/Anderson Act. The threshold for coverage is $60 million.

Please accept this corrected version of my statement for inclusion into the record. I hope that this will clear-up any misunderstanding that my have arisen.

Sincerely,

Robert Alvarez
Director, Nuclear Power
and Weapons Project

cc Senator McClure

218 D Street, S.E. Washington, D.C. 20003 (202) 544-2600

FOOTNOTES

1. Report of the Comptroller General of the United States, "Congress should increase financial protection to the public from accidents at DOE nuclear operations, September 14, 1981, (EMD-81-111),p 3.

2. U.S. Department of Energy, "Report to the Congress as Required by Section 170p of the Atomic Energy Act, as amended," August 1, 1983, Enclosure one, p B-3.

APPENDIX IV

Additional Communications Submitted for the Record in Support of John S. Herrington

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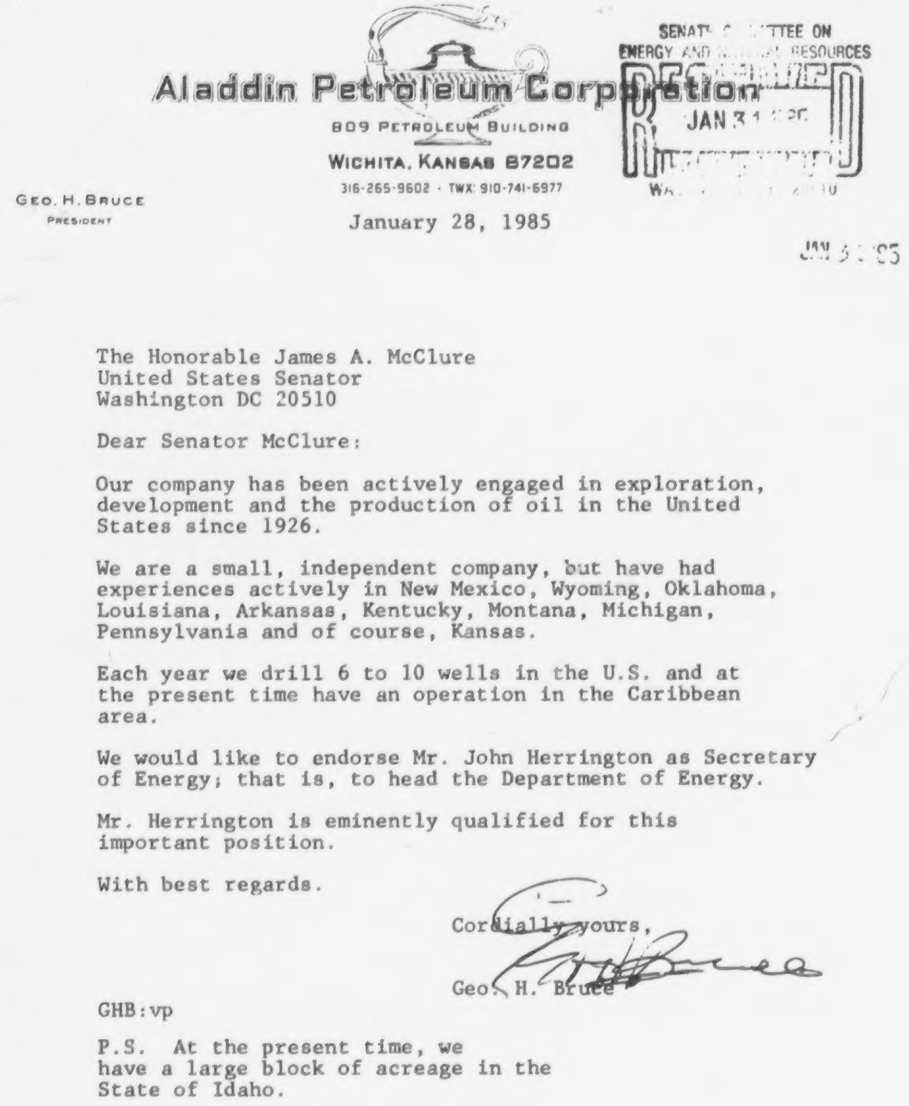

Aladdin Petroleum Corporation
809 Petroleum Building
Wichita, Kansas 67202
316-265-9602 · TWX: 910-741-6977

Geo. H. Bruce
President

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
JAN 31 1985
WASHINGTON, D.C. 20510

January 28, 1985

JAN 31 '85

The Honorable James A. McClure
United States Senator
Washington DC 20510

Dear Senator McClure:

Our company has been actively engaged in exploration, development and the production of oil in the United States since 1926.

We are a small, independent company, but have had experiences actively in New Mexico, Wyoming, Oklahoma, Louisiana, Arkansas, Kentucky, Montana, Michigan, Pennsylvania and of course, Kansas.

Each year we drill 6 to 10 wells in the U.S. and at the present time have an operation in the Caribbean area.

We would like to endorse Mr. John Herrington as Secretary of Energy; that is, to head the Department of Energy.

Mr. Herrington is eminently qualified for this important position.

With best regards.

Cordially yours,

G H Bruce

Geo. H. Bruce

GHB:vp

P.S. At the present time, we have a large block of acreage in the State of Idaho.

Ashland

ASHLAND OIL, INC. • POST OFFICE BOX 391 • ASHLAND, KENTUCKY • 41114 • PHONE (606) 329-3333

JOHN R. HALL
Chairman and
Chief Executive Officer
(606) 329-3621

JAN 31 '85

January 26, 1985

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
JAN 31 1985
[illegible]
WASHINGTON, D.C. 20510

Senator James A. McClure
United States Senate
Washington, D. C. 20510

Dear Senator McClure:

While I have not had an opportunity to meet John Herrington personally, many of my friends in the industry believe he is an excellent choice for the new Secretary of Energy. We understand that Mr. Herrington is a bright person with administrative skills and an ability to grasp new situations quickly.

We at Ashland Oil would like to support John Herrington's confirmation and hope that you will look favorably upon him.

Sincerely yours,

John

JRH:blw

Official Committee File

comar oil company

Cortlandt S. Dietler
President

30 January 1985

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
FEB 5 '85
WASHINGTON, D.C. 20510

Honorable James A. McClure
Chairman, Committee on Energy
and Natural Resources
3121 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Senator McClure:

The entire petroleum industry is in need of an individual who is conversant with its many complex aspects. Mr. John Herrington, who has been nominated by the President to be Secretary of the Energy Department, seems to fill this important need. Like all industries of whatever nature, the petroleum industry has its peculiar and distinctive concerns. Harmonious and constructive relations with all governmental agencies must be maintained in order for both parties to properly evaluate ongoing conditions and problems. It is my hope that you and your Committee on Energy and Natural Resources will act favorably in regard to Mr. Herrington's appointment.

Despite some of the thinking which currently seems to prevail in Washington, there still remains an energy shortfall in the United States as a result of our continuing dependence upon the import of about 33% of our liquid hydrocarbon requirements. This nation must not allow the euphoria of a momentary so-called "glut" to cloud the issue of basic self-preservation. I know that you understand this condition -- I hope that you will be able to convince others in the Congress, as well as the multitude of bureaucrats, that this is a real condition which must be dealt with wisely, promptly and logically.

Thanking you for your consideration, and with kindest personal regards, I remain

Sincerely,

cc: Members, Committee on Energy and
Natural Resources, United States Senate

1801 BROADWAY • P.O. BOX 5660 • DENVER, COLORADO 80217 • (303) 298-0722

Association of American State Geologists

February 4, 1985

Senator James A. McClure
Chairman, Committee on Energy
  and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

On behalf of the Association of American State Geologists, I wish to convey our endorsement of the confirmation of John Herrington to become Secretary of the Department of Energy.

Mr. Herrington's close association with President Reagan as special assistant for Presidential personnel matters, and his service as former deputy of James Baker, provide an opportunity for Mr. Herrington to work closely with the President in the achievement of national energy policies. Mr. Herrington's experience in practicing corporate law and as Assistant Secretary of the Navy have brought him insights in energy issues and their importance to our future.

We advocate a prompt confirmation of Mr. Herrington and look forward to his leadership as Secretary of the Department of Energy.

Thank you for consideration of this recommendation.

Sincerely yours,

James F. Davis
State Geologist of California,
President of the Association
  of American State Geologists

[illegible]ittee File

Jim Duvall

P.O.Box 796 Milton, Florida 32570

January 31, 1985

SENATE [illegible]TTEE ON
ENERGY AN[illegible] RESOURCES
FEB [illegible] 85
WAS[illegible], D.C. 20510

Senator McClure
Committee on Energy
and Natural Resources
United States Senate
Washington, D.C. 20510

Re: Confirmation of John Herrington
Proposed Secretary of Energy

Dear Senator:

Please accept this letter as an indication of my support for the confirmation of John Herrington, proposed Secretary of Energy.

I believe that John Herrington is exceedingly qualified to hold the position of Secretary of Energy and feel that we are fortunate that President Reagan has selected someone of John's qualifications and experience to head the DOE.

I hope that this letter will help to lend encouragement to your decision.

Respectfully yours,

J. M. Duvall

JMD/wep

Official Committee File

Hamilton Oil Corporation
1560 Broadway, Suite 2000
P.O. Box 5870
Denver, Colorado 80217
303/863-3000

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
FEB 5 '85
WASHINGTON, D.C. 20510

January 28, 1985

The Honorable James A. McClure
Chairman
United States Senate Committee
on Energy and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Senator McClure:

I'm writing to express my support of John Herrington, proposed Secretary of Energy.

Mr. Herrington is an excellent candidate for this position, and I hope you will support his nomination.

Sincerely,

Frederic C. Hamilton

FCH:fh

MALOUF ABRAHAM, INC.
P. O. BOX 36
CANADIAN, TEXAS 79014
806/323-6447

[illegible] Committee File
WASHINGTON, [illegible] 20510

January 28, 1985

Senator James A. McClure
Chairman
Committee on Energy and Natural Resources
United States Senate
Washington, D.C. 20510

RE: John Harrington
Proposed Secretary of Energy

Dear Senator McClure:

I wanted you to know how pleased I was that President Reagan nominated John Harrington to be Secretary of Energy.

I am sure that John will do an outstanding service to our country as head of the DOE. He has an excellent background to serve in this capacity. He would approach the various problems with an open mind and would do everything possible to help solve the energy problems of our country.

I am a small independent operator, very active in the industry, and well aware of all the problems we have. It seems that most people are not aware of how vital energy is to the defense of our country. I will appreciate your help to see that John Harrington is confirmed by a large majority.

Sincerely yours,

Malouf Abraham

MA:ls

ANADARKO BASIN OIL AND GAS PROPERTIES
Malouf Abraham Mert Cooper John T. Kerrigan, Jr. Rodney Laubhan

George P. Mitchell
President

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
JAN 31 1985
WASHINGTON, D.C. 20510

January 29, 1985

The Honorable James A. McClure
361 Dirksen Office Building
Washington, D.C. 20510

Dear Senator McClure:

It is my understanding that confirmation hearings will soon begin for Mr. John Herrington whom President Reagan has nominated for Secretary of Energy.

While I am not personally acquainted with Mr. Herrington, some of my friends have assured me that he is administratively sound and will make an excellent head of the DOE.

I would appreciate your favorable support for Mr. Herrington's nomination.

Sincerely,

George P. Mitchell
President

GPM:pb

MITCHELL ENERGY & DEVELOPMENT CORP., 2001 TIMBERLOCH PLACE,
P. O. BOX 4000, THE WOODLANDS, TEXAS 77380 713/363-5500

R. W. MONCRIEF

MONCRIEF BUILDING
NINTH AT COMMERCE
FORT WORTH, TEXAS 76102
TELEX 75-8414 817 336-7232

Official Committee File

January 30, 1985

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
FEB 5 '85
WASHINGTON, D.C. 20510

The Honorable James A. McClure
United States Senator
U.S. Senate
Washington, DC 20510

Dear Senator McClure:

We are writing to ask your support for confirmation of John Herrington, proposed Secretary of Energy.

In the past you have always shown an interest in opinions of people in the industry; and for that reason, we wanted you to know that we and our friends in the industry feel comfortable with Mr. Herrington. We feel fortunate that the President has selected someone of John's qualifications.

Thank you again for your support, and best wishes for the new year.

Yours very truly,

R. W. Moncrief

mb

NORTH CENTRAL OIL CORPORATION

8001 SAVOY, SUITE 600
HOUSTON, TEXAS 77036
713/974-4600

Official Committee File

C. A. WATTS
PRESIDENT

February 4, 1985

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
FEB 07 '85
WASHINGTON, D.C. 20510

The Honorable James A. McClure
United States Senate
Washington, D.C. 20510

Dear Senator McClure:

I'm writing to ask your support for confirmation of John Herrington as Secretary of Energy.

Mr. Herrington is the type person with whom our industry can work. He is administratively sound and has an open mind toward the industry's problems and future.

I wholeheartedly endorse Mr. Herrington's nomination and sincerely request your support of his confirmation.

Very truly yours,

C. A. Watts

C. A. Watts

CAW:pmw

RICHARD D. SMITH
President

RANGE OIL COMPANY, INC.

Official Committee File

January 30, 1985

Senator James A. McClure
361 Dirksen Senate Office Bldg.
Washington, D. C. 20510

Dear Jim:

I am writing to tell you of my support of John Herrington for Secretary of Energy. As you know, he is very capable and experienced. I hope you agree that he is the right man for the job.

Very truly yours,

Richard D. Smith
President

RDS/md

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
FEB 5 1985
WASHINGTON, D.C. 20510

240 Page Court
220 West Douglas
Wichita, Kansas 67202

Official Committee File

J. W. SNIDER
P. O. BOX 88
BORGER, TEXAS 79007

January 28, 1985

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
JAN 31 1985
WASHINGTON, D.C. 20510

The Honorable James A. McClure, Idaho
United States Senate
Washington, D. C.   20510

Dear Senator McClure:

I'm writing to ask for your support for confirmation of John Herrington, proposed Secretary of Energy.

We feel this is the most qualified and capable man for the job at this time.

Thank you for your attention in this matter.

Sincerely

JW Snider

J. W. Snider

Summit Energy, Inc.
1925 Mercantile Dallas Building
Dallas, Texas 75201
(214) 748-0221 - Telex 73-0686

Official Committee File

February 1, 1985

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
FEB
WASHINGTON, D.C. 20510

The Honorable James A. McClure
Chairman
Committee on Energy and Natural Resources
United States Senate
358 Dirksen Senate Office Building
Washington, D. C. 20510

Dear Mr. Chairman:

I would like you to know that I support President Reagan's nomination of John Herrington as Secretary of Energy. He is a sound administrator and has a proven track record. I hope you will support the confirmation of John Herrington for this office. Thank you for your consideration of this matter.

Sincerely yours,

Jack D Knox

Jack D. Knox
President

JDK/dh

SCOTT L. TALIAFERRO
FIRST STATE BANK TOWER
P. O. BOX 240
ABILENE, TEXAS 79604
(915) 673-5024

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SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
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FEB 14 1985
WASHINGTON, D.C. 20510

February 5, 1985

Senator James A. McClure, Chairman
Senate Committee on Energy and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Senator McClure:

It is my understanding that Mr. John Herrington has been proposed for the position of Secretary of Energy.

Mr. Herrington is certainly well qualified for such a responsible position, and he is the type individual who can work with both the energy industry and the DOE. We need someone in this position who can inspire cooperation and constructive thinking. Consequently, I would respectfully urge your support for John as Secretary of Energy.

Yours very truly,

Scott L. Taliaferro

SLT:jd

cc: MEMBERS OF COMMITTEE ON ENERGY AND NATURAL RESOURCES

Senators:
Mark O. Hatfield
Lowell P. Weicker, Jr.
Pete V. Domenici
Malcolm Wallop
John W. Warner
Frank H. Murkowski
Don Nickles
Chic Hecht
John H. Chafee
Daniel J. Evans
J. Bennett Johnston
Dale Bumpers
Wendell H. Ford
Howard M. Metzenbaum
Spark M. Matsunaga
John Melcher
Bill Bradley
Carl Levin
John Heinz

VAUGHEY AND VAUGHEY
OIL PRODUCERS

POST OFFICE BOX 61309
DENVER, COLORADO 80206-6309

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
FEB [illegible] 85
WASHINGTON, D.C. 20510

January 28, 1985

The Honorable James A. McClure
Chairman, Committee on Energy and Natural Resources
The United States Senate
Washington, D. C. 20510

Dear Senator McClure:

We understand that the confirmation process for JOHN HERRINGTON as Secretary of Energy will begin soon. Our knowledge of Mr. Herrington is that he will not only represent our country but will consider the position of those who produce energy for the country. We believe he is well qualified and an excellent administrator.

We urge you to support the confirmation.

Mr. W. T. "Bill" Blackburn joins me in this letter of recommendation.

Very truly yours,

VAUGHEY AND VAUGHEY

By Patsy M Ellis
Patsy M. Ellis
PME:a

P. S. We will always be grateful for your being the principal speaker at the fundraising dinner which got Senator Bill Armstrong off to his campaign for the Senate.

WALTER OIL & GAS CORPORATION

J.C. Walter, Jr.
President

ial Committee File

January 29, 1985

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
FEB
WASHINGTON, D.C. 20510

The Honorable James A. McClure
Chairman
United States Senate Committee
on Energy and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Senator McClure:

I hereby request your support and confirmation of John Herrington as Secretary of Energy. As Energy Secretary, Mr. Herrington will, undoubtedly, prove to be a strong asset to our industry and our Nation.

Respectfully,

JCW:dc

240 The Main Building, 1212 Main Street, Houston, Texas 77002 (713) 659-1221

Official Committee File

WARD PETROLEUM CORPORATION
BOX 1187 / 502 S. FILLMORE / ENID, OKLAHOMA 73702 / (405)234-3229

FEB 01 '85

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
FEB [illegible]
WASHINGTON, D.C. 20510

January 28, 1985

Sen. James A. McClure
Dirksen Senate Office Building
Washington, D.C. 20510

Dear Senator McClure:

I'm writing to support the confirmation of John Herrington as Secretary of Energy.

John is the type of person with whom our industry can work. He is administratively sound and has an open mind toward the industry's problems and future. We are fortunate that President Reagan has selected someone of John's qualifications and experience to head the DOE.

I'm convinced the industry and the DOE have a strong candidate in John Herrington.

Sincerely,

L.O. Ward

LOW/cll

P. O. BOX 297
915 INTERFIRST BANK PLAZA
TYLER, TEXAS 75710

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
JAN 31 1985
WASHINGTON, D.C. 20510

January 28, 1985

JAN 31 '85

Senator James A. McClure
United States Senate
Washington, D. C. 20510

Dear Senator McClure:

Soon it will be necessary for you to make a decision on John Herrington, proposed Secretary of Energy. It is unnecessary for me to tell you of his background and the forthright way he conducts himself personally and in business.

I've been in the oil producing business for fifty years and I look forward to John Herrington's guidance in the Energy Department.

I would appreciate your good offices in this matter.

Warm regards,

Watson W. Wise

WATSON W. WISE

WWW/ab

C. TAYLOR YOAKAM
POST OFFICE BOX 2009
AMARILLO, TEXAS 79189
806-378-1013

January 30, 1985

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
JAN 31 1985
WASHINGTON, D.C. 20510

The Honorable James A. McClure
Chairman, Committee on Energy
and Natural Resources
United States Senate
Washington, DC 20510

Dear Senator McClure:

I was most pleased to note that President Reagan had selected John Herrington as the proposed Secretary of Energy. I have had the opportunity to meet and visit with John Herrington on two different occasions and was most impressed by his qualifications and administrative abilities. He appears to be open minded on energy industry problems.

I hope that Mr. Herrington will have your support in the upcoming confirmation proceedings.

Sincerely,

C. Taylor Yoakam

CTY:sms